AUTOMOBILES

THE MOTOR AGE

THE AUTOMOBILE AUTHORITY.

Entered at Chicago Post Office as Second-Class Matter. Published every Thursday by the Cycle Age Co., 324 Dearborn Street, Chicago. Eastern Office, 150 Nassau Street, New York. Subscription—Domestic, $2.00; Foreign, $4.00.

Price 5 Cents | CHICAGO OCT. 3, 1901 | Vol. V. No. 4

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Kokomo Rubber Co.

KOKOMO, IND.

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THE MILWAUKEE AUTOMOBILE COMPANY exhibited: The **largest** steam vehicle—The thirty-five horse power truck. The **fastest** steam vehicle—the mile-a-minute racer. :: The **only** steam **delivery cart**—600 to 1000 lbs load capacity. **The largest number** of steam vehicles—Eleven, no two alike. ::

"The Milwaukee" has an air pump working on the cross-head of the engine. It maintains the required air pressure at all times, and unless you are anxious to work up your muscle with a hand pump, you will before buying any other steam carriage, inquire about this, of the

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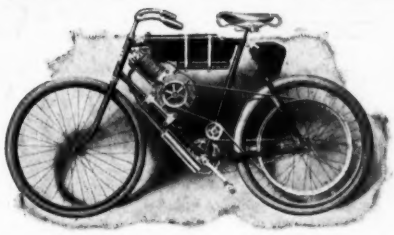

Swift, powerful and easy to operate. We have a reputation, of years standing, as makers of high-grade wheels—we can't afford to make any other kind. The rider will find in the Mitchell motor bicycle all the many points of excellence which have always characterized our goods. Buy the Mitchell, the kind you know about. Catalog free.

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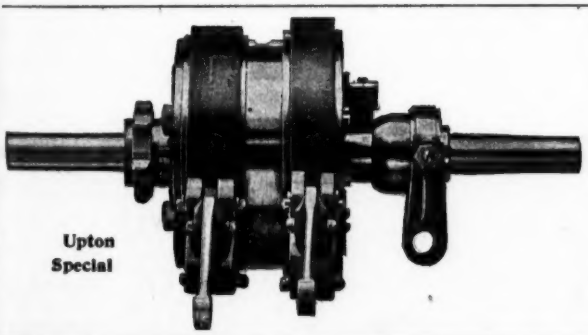

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About 300 Pages, 4 Large Colored Maps, 4 Smaller Maps

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Complete descriptions of seventy routes adapted for automobile traveling and extending in a radius of 50 miles from New York, Boston, Philadelphia and Washington—with maps.

List of 500 automobile stations provided with repair and supply facilities, and telegraphically connected. Special code established.

(These stations have been established by the OFFICIAL AUTOMOBILE BLUE BOOK COMPANY, and their number will be gradually increased until about 1200 is reached in the territory extending 150 miles or more inland from south of Washington to north of Boston.) Maps specially prepared to show all the routes described and all the good roads in the entire territory, in blue.

Much other useful information too varied for mention.

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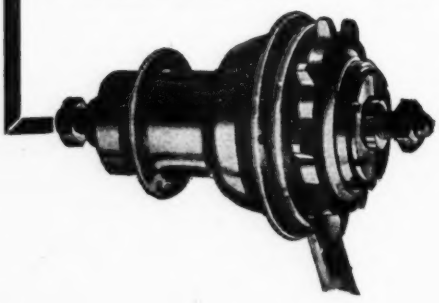
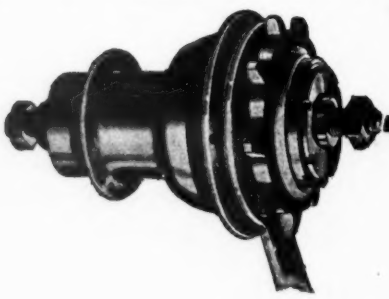
Un-Morrowized Bicycles

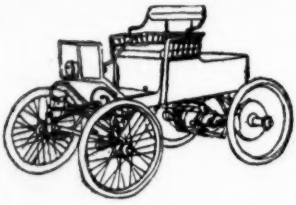
ARE THERE IN YOUR TOWN?

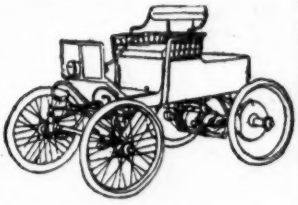
As a matter of fact there is no good reason why every bicycle should not be fitted with a Morrow. Those that remain un-Morrowized constitute evidence that there is work for you to do—work that will add to your profits and to the pleasure of the rider. "Go after" them.

ECLIPSE MFG. CO. :: :: ELMIRA, N. Y.

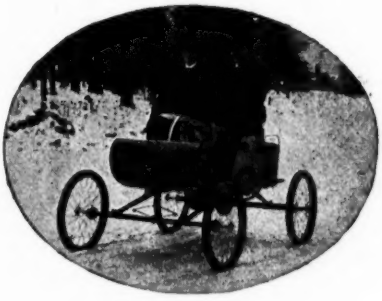








DO YOU WANT THE BEST AUTOMOBILE FOR WINTER?



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Oldsmobile

IS GOOD IN ANY KIND OF WEATHER

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THE PRICE NOW IS TOO SMALL

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After Jan. 1st, 1902, the price will be much more.

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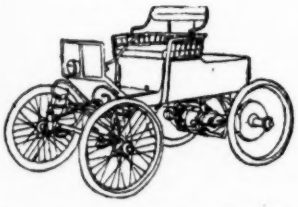
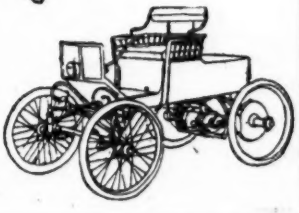
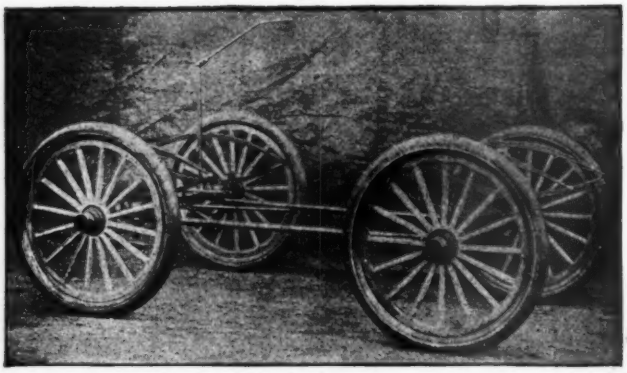




Automobile Running Gears



Get a running gear that is past the experimental stage and build a SUCCESSFUL AUTOMOBILE

We make two styles complete with springs and wood wheels, solid rubber or pneumatic tires. ∴ ∴ ∴ ∴ ∴

OUR SPRING BLOCK BEARING IS SELF-ADJUSTING

and you ought to have it. It is made for revolving axles and is pivoted between the bearing and spring block, enabling the bearing to move free and easy with the axle always. Our catalogue tells all about it. ∴ ∴ ∴ ∴ ∴ ∴ ∴ ∴ ∴

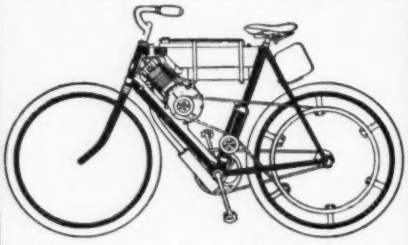
The Brecht Automobile Co. 1201 Cass Avenue, **St. Louis, Mo.**

Do You Want to Buy an

AUTO-BI

that has stood every racket?

We have three (3) Auto-Bies that have been over those fearful roads from New York to Buffalo, that can be bought of us.



The first three (3) to get in line for these machines are going to get them.

If you want to own one of these famous machines, write us at once. There are only three (3) machines but there are hundreds of bicycle dealers and others who will want them.

E. R. THOMAS MOTOR CO., (Inc.)
103 Broadway - - - - Buffalo, N. Y.

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FOR AUTOMOBILES

are detachable, double tube tires. An occasional puncture is inevitable in any tire. Any one can repair a G & J Automobile Tire easily and permanently.

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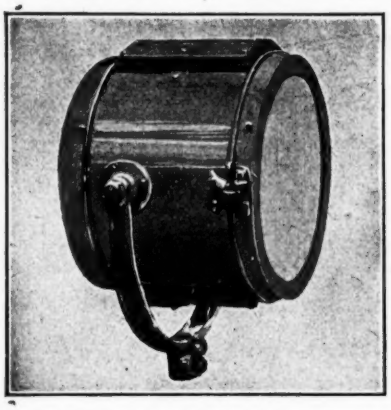

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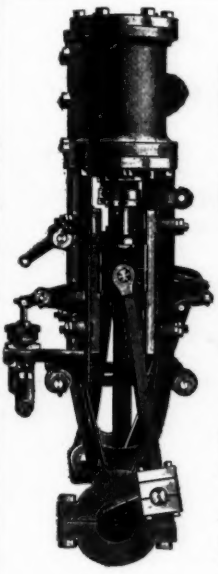

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MECHANISM SIMPLE AND SERVICEABLE

Each engine supplied with heavy asbestos cylinder jackets.

Engines carried in stock. Can be shipped on receipt of order.

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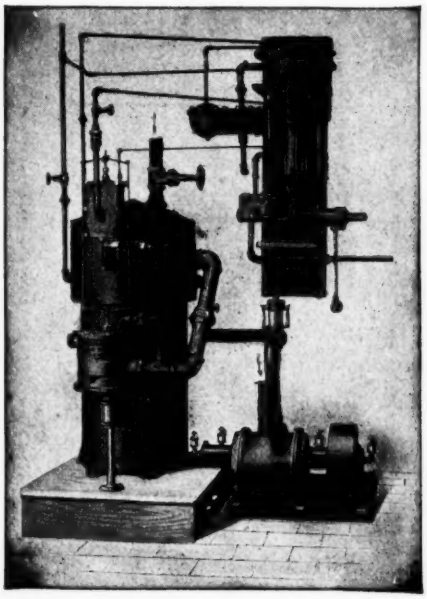
SALEM, MASS.



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Any Capacity
Great or Small

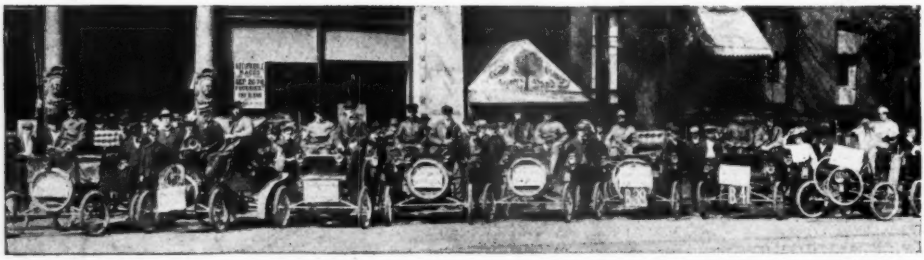
In use in steam laundries with small requirements and packing houses using 300 gallons of gasoline daily.

Gas of required density without use of supplimentary air blast.
No condensation.
Vaporizes every particle of oil.

We shall be pleased to figure on the requirements of automobile manufacturers.

GEO. D. GARLAND, - 43 S. Clinton St., - CHICAGO, ILL.

Locomobile



(Photograph Taken in Front of Locomobile Branch, Buffalo.)

All Six Locomobile Runabouts Arrived at Buffalo in Good Order

C. Arthur Benjamin, in a 3½ h. p. Locomobile was third at the final control and the first steam carriage to arrive.

Write for information about new and improved Locomobile

THE LOCOMOBILE COMPANY OF AMERICA

7 E. 42nd Street, NEW YORK

CHICAGO BRANCH, 260 WABASH AVENUE

CURRENT NOTES AND COMMENTS

New York, Sept. 28.—Professional auditors began work today on the report of the A. C. A. endurance run committee. It is probable that the MOTOR AGE figures will have to satisfy the participants' yearnings for the tabulated results for some days yet, as the committee announces that the figures will not be given out until they have been audited and presented to the governors, accompanied by an explanatory report.

Pay of French Chauffeurs

Many of the imported chauffeurs employed by owners of French and German machines are making hay while the sun shines. There are about 100 of these men in this country, and their salaries run from $30 to $45 per week. A MOTOR AGE representative talked with one recently in a New York automobile exchange, where he was preparing a 20-horse power Panhard for an afternoon run. He said he realized that it would not be long before Americans understood the foreign machines, but that at the present the services of his countrymen were absolutely necessary, and they received more than they deserved. The success of these Frenchmen has created a big stir in the New York French quarter, and it is said by one stable superintendent that hardly a day passes without a Frenchman applies for a job, depending on his accent and a slight knowledge of machinery to land him in a soft berth. A few minutes around one of the wagons soon gives evidence of his helplessness, but that does not prevent him from trying to work "ze rich American."

Splendid Course for Endurance Test

Several prominent manufacturers who have been seen by MOTOR AGE representatives have expressed the opinion that, in the event of the automobile club conducting an endurance tour next year, no better route could be suggested than from New York to Boston and return. It is pointed out that a tour between these cities would include some of the most prosperous communities in the country, and the advantage thus gained would do more good to the automobile industry than any number of trips to Buffalo. The roads, too, are the best in the east, and no such harrowing experiences as were met in the recent contest would be contended with. Taking the trip by way of Bridgeport, New Haven, Hartford, Springfield and Worcester, there is practically only one stretch which would in any way suggest the recent battle. Near Wallingford, Conn., there is a sandy road, running for several miles, which those who have passed over, or rather through it, say is as bad as anything in New York state. This, however, runs only a comparatively short distance, and, judging from the fine showing made by the machines two weeks ago, would not cause much trouble to the contestants. On the route suggested there are several long hills suitable for a hill contest, and, taking all together, there is much to commend the New York to Boston suggestion.

Plans for Chicago Show

Under date of Sept. 28, the show committee of the Chicago Automobile Club, consisting of F. C. Donald, chairman; Edwin F. Brown, and W. D. Sargent, issued the following notice:

"The first annual automobile exhibition, under the auspices of the Chicago Automobile Club and the National Association of Automobile Manufacturers, will be instituted in the Coliseum building, Chicago, March 1 to 8, inclusive, 1902. It is noteworthy that this will be the first exhibition in which the National Association of Automobile Manufacturers will be associated and interested.

"The inauguration and conduct of the show will be practically on the lines of the automobile exhibition held at the Coliseum last year. Plans and details are being prepared and will be distributed in the course of a few days.

"The Coliseum affords exhibition space and facilities the magnitude of which is not excelled by any building of its character in the United States. Its capacity has recently been augmented by the addi-

tion of an annex 75x175 feet. It was the scene of the first indoor automobile exhibition held in Chicago, in March, 1900, when the facilities of the building for an exhibition of this nature were fully tested and satisfactorily met. The management and the commercial advantages of this show were uniformly commended by the exhibitors. With the facilities commanded, and the united efforts of the leading Automobile club of the west and the manufacturers' association it is believed that the exhibition will be unqualifiedly successful.

"Mr. S. A. Miles, who managed last year's exhibition, will assume the general direction of the show which will be instituted on March 1 next, and which, it is believed, will receive the cordial support of the manufacturing interests of the city of Chicago and general public, assuring an exhibition creditable alike to the trade, the club and to the manufacturers' association."

Long Trip by a Chicagoan

Arthur J. Eddy, formerly president of the Chicago Automobile Club, has just finished a trip of about 2,900 miles, said to be the longest continuous trip in an automobile so far made in this country. He visited a number of eastern cities, and was once arrested for fast driving and for scaring a timid young man in a Connecticut town, but considers the trip an unqualified success and one of the most enjoyable experiences of his life. The worst roads were in the neighborhood of Herkimer, where so many of the competitors in the late endurance run came to grief.

Influence on Minnesota Roads

Minneapolis, Minn., Sept. 27.—The influence of the automobile as a factor in the problem of good roads has made itself quite apparent in Hennepin county during the past season. Much road work has been done and by far the greater part of it upon roads that are main traveled routes for society and chauffeurs. This is particularly true of roads leading to Minnetonka and between different parts of the lake, where the county has spent no small amount of money in improvements, although no considerable sum has been spent on any one piece of work.

One of the important improvements now in progress, which will be completed shortly, is the graveling and resurfacing of the county road from Wayzata to Western avenue. This is the shortest route between the city and Ferndale, Minnetonka Beach and other fashionable resorts on the north shore, but it has been in such wretched condition heretofore as to make automobiling over it far from a pleasure. However, the road is now in first class condition over almost its entire length and the work will be completed within a few days.

The road from Langdon Park to the narrows is now being graded and will be open and in good shape by the middle of next week. The Saga Hill road, an unusually picturesque route between the West and North arms, has been graveled, and is now as good as any of the country roads. Moreover, a survey is being made for a road connecting Fagerness with Shadywood, and running into the Crystal Bay lake shore drive, a route that will be greatly appreciated by cottagers in that vicinity. Active work will begin here shortly and the road will be opened for travel early in the spring. The Spring Park-Phelps Island road has also been graded and resurfaced and various other drives about the lake have been put into first class condition.

Philadelphia Show Announced

From the office of the second annual automobile show at Philadelphia comes the following notice: "There will be given in this city, Nov. 16 to 23, the second annual automobile show of Philadelphia, given under the same management as the successful show which was held last year. Among the large number of exhibitors of last year's show there was not one who did not find it a paying venture, and all concerned decided that it was a great advantage to the trade in this city. Philadelphia, with its large number of paved streets, its beautiful drives and interesting park, is an ideal city for automobiling, and, although the automobile show given in New York is a great advantage for the manufacturers to meet the dealers, it does not help the dealers in Philadelphia to reach the consumers, consequently, after a thorough canvass of the dealers in Philadelphia, it was decided to hold this show on the above mentioned dates. This will give the

manufacturers exhibiting in New York a chance to move their exhibits to Philadelphia. The show will be given at the same building as last year; that is, the Second Regiment Armory, Broad and Susquehanna avenues, which building, since last year, has been enlarged and remodeled."

Major Davidson's Object

It should be said of the attempts made by Major Davidson to produce a gun carriage which will successfully run to Washington and back to Chicago that the major's interest in the matter is purely unselfish. His experiments have not been made with any pecuniary advantage in view, but solely to interest the students of the Northwestern Military Academy and incidentally to help along the good cause. Major Davidson is, threfore, somewhat annoyed at the comments which have appeared in some of the daily papers, which have misrepresented his aims and accomplishments. A letter from the gentleman will be found in another column of this issue.

Races at Chicago and Joliet

The Chicago Automobile Club has decided to go ahead with its race meet, despite its inability to secure Washington Park for the date originally set. At a meeting of the directors on Monday it was decided to hold the meeting on Tuesday, October 15, at Washington Park. A committee, consisting of Messrs. Donald, Shaw, Brown, Tucker, Brinkerhoff, Pine and Miles was appointed and at once commenced work on the program and other details. The program will probably consist of the following events:

Five miles, gasoline machines, 1,000 pounds and under; 5 miles, gasoline machines, between 1,000 and 2,000 pounds; 5 miles, match between Messrs. Robert Shaw and Armour, both operating 8-horsepower Panhards; 5 miles, match race, between Messrs. E. B. Shaw and C. E. Gates, both operating 12-horsepower Panhards; 5 miles, steam vehicles, not equipped for racing, initial steam pressure not to exceed 280 pounds; 5 miles, steam racing carriages; 5 miles, motor bicycles; 5 miles, motor tricycles, not exceeding 3 horsepower; 1 mile electric stanhopes; 1 mile electric runabouts, racing machines excluded; 25 miles, invitation, gasoline vehicles, weight and power unlimited.

For the last named event invitations will probably be extended to Messrs. Vanderbilt, Keene, Scott, Bostwick, Winton and Fournier. Entry blanks will be issued before the end of the week. The club will be represented at Detroit and will endeavor to secure the entries of some of the competitors there engaged.

Following the Chicago meet will come one at Joliet, concerning which brief mention was made last week. There has been organized in that city a company with a capital of $100,000, which has bought the race track and intends to promote an annual meeting. The principal object of the new company is to boom the interests of the town and to that end no reasonable expense will be spared. The dates of the coming meeting are Friday and Saturday, October 18 and 19. The program is as follows:

Friday—5 miles, gasoline vehicles, 1,000 pounds and under; 10 miles, gasoline vehicles, between 1,000 and 2,000 pounds; 10 miles, gasoline vehicles, weight and power unlimited; one-half mile, steam vehicles, from stock; 5 miles, steam racing carriages; 2 miles, motor bicycles; 3 miles, motor tricycles, 3 horse-power and under; 1 mile, flying start, all classes of 1,000 pounds and under, racers excepted.

Saturday—Road race, Chicago to Joliet, about 37 miles, all classes of vehicles; 5 miles, gasoline carriages, between 1,000 and 2,000 pounds; 10 miles, gasoline vehicles, 1,000 pounds and under; 25 miles, gasoline machines, weight and power unlimited; 5 miles, steam, stock carriages; 1 mile, steam racers; 3 miles, motor bicycles; 2 miles, motor tricycles, 3 horse-power and under; 1 mile, flying start, all classes under 1,000 pounds, racers excepted. There will be record trials at the close of each day's racing.

At these meetings bicycles, tricycles and quads will not be allowed to compete in any of the events except those specially provided for them and the 1 mile race at the end of the program of each day. Permission to hold the road race has already been obtained over the greater part of the road. The committee in charge will make provision for water at stated intervals of the course. The chairman of the committee is

W. C. Crolius of Joliet, Ill., of whom entry blanks and other details may be obtained.

Coming European Shows

The Fourth International Automobile, Cycle, and Sports Exposition is to be held in the Grand Palais, Paris, December 10 to 25. The condition of entry is generally the same as was in force during the last exposition, with the exception that the price of space, which remains the same in the nave of the building, will be diminished in the less favored localities. There will be the following classification: Automobiles, motocycles and all vehicles of mechanical traction, cycles of all kinds, material for the construction of automobiles and cycles, tires, detached pieces, accessories, motors, navigation, aerostatics, miscellaneous sports and touring, body work for automobiles, automobile and cycle costumes, inventions, automobile and cycle literature and photography. The president is M. Gustave Rives, Automobile Club of France, Hotel Plessis-Belliere, 6 place de la Concorde, Paris.

The Holland Industrial Cycle and Automobile Association has organized an international exposition for February, 1902. It will be held at Amsterdam.

Automobiles for European Governments

In a report to the consular department United States Consul Haynes, of Rouen, says:

"Apropos of a recent report from this office on automobiles, it seems that self-propelled vehicles are to play an important part in European warfare. The bicycle has already come to be a fixture in the French army. Twenty cyclist companies are to be formed next year. The machine upon which they are to be mounted is the invention of the captain, who this year organized the first company of the kind. It can be folded and placed on the back, much after the foot soldier's knapsack, as it weighs only 36 pounds.

"Not long since the automobile owners in France received a circular from the artillery station at Vincennes regarding the conditions upon which automobiles could be bought, should mobilization become necessary. The minister of war in Germany is having vehicles constructed with tables upon which officers can consult their maps while on the march, and also as ambulances, and to carry guns, ammunition, etc. In the recent German military movements automobiles, motocycles, and bicycles entirely replaced horses in the service of the general staff. To obviate expense and delay in special construction of railroads for campaign purposes, the minister of war of Austro-Hungary and of Italy are having automobiles built solely for rapid mobilization. The latter has offered prizes for types fulfilling certain conditions. The secretary of state for war in England has offered prizes amounting to more than $4,000 for the best self-propelled lorry, or wagon, for military purposes.

Fools, Bulls and Automobiles

A cablegram from Mayonne says that M. Henri Deutsch of aeronautic fame, presided at the bullfight, his condition being that an automobile should be tried in place of horses. The results show that, in spite of the faith the Spaniards have that a bull will face anything, the "toro" would not undertake to tackle the automobile. After the automobile had run around many times for sake of practice, a long horned black bull darted into the ring and made furious rushes at the matadors. But he refused to have any dealings with the automobile. The real trial was when a seventh bull was given over to the automobile essay. Once, and once only, did the "toro" attack the automobile. He made a half-hearted turn at the front wheel, only to meet the iron plate with which it was protected. Then an end was made of the ridiculous, unsportsmanlike display.

Police Urge Greater Speed

An unusual and somewhat amusing occurrence was noted at Glasgow on the occasion of the late automobile trials. Police officers were stationed at intervals along the route to see that the laws were obeyed and that the traffic was not unduly interfered with, but they found that the speed allowed by law was inadequate to get the vehicles out of the way in time to prevent serious congestion. The operators dared not go faster, and in the end the policemen, in desperation, urged them on, thereby inciting them to break the law. The police even urged them to take corners at

unsafe speed, but this the better sense of the drivers told them not to do. On the straight stretches they made all possible speed, however, while the enthusiastic "bobbies" encouraged them. The incident seems to show that it is impossible to make a hard and fast rule which will suit all occasions. The Glasgow police are to be congratulated on having set an example which can be followed in other places, under similar conditions, without harm to anyone.

An Echo of the Test

From the Jacksonville (Fla.) Times-Union: Competition among the manufacturers and rivalry among the owners of automobiles, together with that sporting spirit which is always best when entirely divorced from all gambling methods, has recently resulted in a "long distance test" for the new machines to prove their practical usefulness. Fifty-four gasoline machines and twenty-seven steamers started from New York to Buffalo by country roads, with mud to drag through and hills to climb—forty-one arrivals are recorded.

But it was demonstrated that even the roads of our Empire state between great cities like New York and Albany and Buffalo were atrocious, though other cities lay frequently on the route and villages were rarely out of sight, there was danger to life and limb because of precipices and narrow paths and huge boulders—costly machines were wrecked and passengers injured—wonder is expressed that the many "overturns" killed nobody. The "weather was beastly," and the experience such that such tests will be considered impossible hereafter unless better conditions can be secured.

The automobile has come to stay—it will be improved, but it will go off the face of the earth no more forever. Let us take advantage of the situation immediately and push Florida to the front. To bring the automobiles and their owners to this state for a series of races or tests during the winter would be exactly what we want—money will come with them, we will provide recreation, excitement and pleasure for our guests, and we will advertise our state most effectively in the best possible way. Why not?

Florida will furnish the climate from November to April that will be all the most fastidious could desire—why should not we do our part where nature does so much? A circuit of sufficient length connecting several of our towns would cost us nothing in roads, because we need them in our business anyhow; health and happiness would attend the journey through our pine woods, and inns and beautiful grounds spring up at the call of custom all along the way; bicycles would follow, and all go merry as a marriage bell. We believe a toll road of this kind would pay as a business investment, but we are rich enough and strong enough to conduct such enterprises now for our own benefit—let the counties make the roads and leave them free to all.

The automobiles demand no fancy tracks—they ask only for the highway the farmer must have in his own interest; they would prove their practical utility for all the purposes of business and pleasure. But a vehicle costing several thousand dollars cannot be risked on cowpaths full of palmetto roots and pine stumps—they will come if we will provide a decent road. Why not? All our neighboring counties are better able than Duval, and all the towns that could be included in the circuit comparatively better prepared than Jacksonville to contribute at this time; but if the proposal once appeared as a business appeal this community would not be found lacking.

When our landlords are all here and business is again under way and the expected crowds attending the fair, what project for improvement could fail to secure a favorable hearing and immediate action?

Why should not Florida offer the first automobile circuit on the highway all her interests demand?

Receiver for Woods Company

At the request of one of the stockholders Max H. Whitney has been appointed receiver of the Woods Motor Vehicle Co. The action is understood to be a preliminary step to reorganization and to prevent threatened trouble. The attorney for the company says it is quite solvent, is doing a good business and if left alone will make a satisfactory profit. Mr. Bufkin, manager of the Woods Motor Cab Co., which is a separate organization, says that in his

department there are no complaints to make and that the books show that the concern is on a paying basis. The cab company leases cabs from the original concern and its business will not be affected by the receivership. The Woods company was organized by Clinton E. Woods, who is now referred to as an expensive investment. He has not been connected with the company for 18 months or more. The nominal capital of the company is $10,000,000 and it is said that $400,000 was spent in getting ready for business. The greater part of the stock is owned by eastern people. It has been settled that the business will be continued.

In Need of Education

If the sentiments of all the members of the Hudson County (N. J.) Road Drivers' Association are akin to those of the secretary something really ought to be done for the improvement of their tempers and manners. After a recent meeting Secretary T. W. Fagen remarked to a reporter:

"The automobile, which is only a plaything for amateurs, will never displace the horse. A man who loves a horse would no more ride on an automobile or bicycle for pleasure than he would cut off his hand. Automobiles are good enough to haul people around who don't know any better, or who don't own a horse, but they are only vulgar machines and will never rise to the stately dignity of horse flesh."

"You seem opposed to the bicycle also; is that so?"

"I have never ridden a bike, and I hope I never will. The automobile and the bicycle were given to men as machines on which to do pennance for their sins. Horses are the things that make the world go round."

Remarkable Activity at Toledo

At last the American Bicycle Co., which has closed so many plants, finds the necessity of more room in at least one branch of its business. Many months ago, to the disgust of the people of Toledo, who said all sorts of things about the iniquity of trusts, the company closed two factories there and disposed of the greater part of the machinery. Now one of them has been reopened and additions are to be built to accommodate the demand for more space in the automobile department. MOTOR AGE told, a few weeks ago, of the concentration of the automobile interests of the company at Toledo. This concentration affected the office force as well as the factories. In short, it appears that practically all of the automobile business of the A. B. C. is to be conducted from the same point as soon as arrangements can be made to that end. The new building is to be 100 x40 feet and three stories high. Other buildings are to follow.

The old Viking plant has been opened as a body making shop. It will employ 300 men. The total number of men on the pay roll at Toledo is now 1,000. Remarkable statements are made about the size of the product during 1902, so remarkable, in fact, that it would hardly be wise to repeat them. The Toledo factory is now making three steam trucks.

Started in Fun, Ended in Jail

Joseph Meyers, a speedy young man of Grand Rapids, is in trouble from having "borrowed" an automobile for the entertainment of some soldier friends. The machine had been stabled for the night but Meyers knew of its location and understood, likewise, how to operate it. Perhaps the escapade might never have been discovered had he and his companions not given way too freely to the cup that cheers.

Toward the approach of day Meyers and his friends were in a venturesome frame of mind. They did great things with that automobile and belated pedestrians can testify that the party had some escapes before it finally came to grief. That sad event occurred at Oak street and Broadway. The exact time is in dispute, although Meyers admits the day was dawning when the crash came.

Meyers was operating the machine. There happened to be a telegraph pole near by. The pole interfered somewhat with the rest of the program. There was a crash. Meyers rolled out on the pavement and the soldiers followed him somewhat indiscriminately. They landed in a heap and Meyers, when he pulled himself together, explained that the party was indefinitely postponed.

Meyers apparently realized that he was in a fix, for he called up Mr. Wells, the owner, by telephone. A conversation something like this was carried on by Meyers:

I just wanted to tell you that your auto-

"Hello! Is this Mr. Wells? Yes. Well, machine is hanging on a telegraph pole down at Broadway and Oak street. Yes, that's true. It's there. What's that? Who am I? Why, I'm the man who hung it there. Drunk? Yes, pretty fair, but I had an awful good time and I'm much obliged."

A couple of hours later Mr. Wells found his machine very much as Meyers had described. He estimated the damage at $300 when he complained to the police. Meyers is under arrest, charged with theft.

New Enterprises

J. B. Lott, president of the Anderson (Ind.) Cycle and Motor Co. has been in Evansville looking for a suitable location for his factory. He was in consultation with several members of the Business Men's Association.

The Graham-Fox Motor Co., of New York city, has been incorporated to manufacture motors and automobiles. The company has a capital of $500,000, and the directors are: Frank A. Fox and David F. Graham, of Stamford, Conn.; James J. Thornley, Jr., of Brooklyn; C. G. Weaver, of New York city, and W. D. Blake, of Richmond Hill, L. I.

G. J. Ryan, of Chicago, who in company with Mr. Atkins is proprietor of an automobile and gasoline engine establishment, has been looking over the prospects of locating a factory at Horicon, Wis.

The Stearns Steam Carriage Co., Syracuse, will enlarge its plant and place new machinery with a capacity of turning out 500 machines next summer. The addition will give employment to about 300 men.

Automobile Co. of Illinois, Chicago; capital, $25,000; manufacturing and operating automobiles and motor vehicles; incorporators, Joseph M. Grove, J. E. Hubbard, Grorge M. Kurtz.

The Regal Gasoline Engine Co., the name of a new company recently organized at Coldwater, Mich. It is considering the project of making an automobile in connection with the engine business.

California's Progressive Club

San Francisco, Sept. 27.—At the first quarterly meeting held under the auspices of the new administration of the Automobile Club of California, evening before last, the enthusiasm was better than normal. The popular new president, F. A. Hyde, gave details of the work of the directors during the past three months in securing the passage of ordinances favorable to automobilists by the boards of supervisors of the counties of San Francisco, San Mateo, Santa Clara, Contro Costa and Sonoma, announcing that copies of the very satisfactory ordinances passed in San Francisco and San Mateo counties are being forwarded to other boards of supervisors throughout the state, expressing the anticipated hope that they will form the basis of similar legislation.

The following were appointed a committeen to take charge of a club run to take place on Sunday, October 6: E. P. Brinegar, C. C. Moore and A. M. Hart. The automobiles will rendezvous at the corner of Golden Gate and Van Ness avenues at 8:30 a. m., and will run out to San Mateo, where a halt will be made for luncheon. Shortly after 1 p. m. a start will be made for Crystal Springs Dam. It is expected that forty horseless carriages will be in line. The return trip will be made by the waye of Lake San Andreas, making the run about sixty miles from start to finish.

In the neighborhood of forty vehicles are expected to take part in the outing, as all chauffeurs, whether club members or not, are welcome. San Jose automobilers will be invited to meet the local clubmen at San Mateo and several are expected to make the trip up the valley.

Among the articles which the Locomobile delivery wagon carried on the endurance run, to make up the required weight, was 500 pounds of oats. This wagon had been out of the factory only a few hours when it started on the contest and went further than any other vehicle of its class. The six Locomobiles arrived at Buffalo without a broken axle or injured running gear in the lot. The Locomobile in which Benjamin arrived third at the final control was a regular stock vehicle.

IMPORTANT CHANGES IN THE THOMAS CO.

There has been a complete reorganization of the affairs of the E. R. Thomas Motor Co., whose gasoline motors have become famous. When Mr. Thomas decided to enter the field about two years ago he had no intention of building motor bicycles. His plan was to make small motors, for he saw ahead an immense demand for a successful American article in this line. But having gone that far he found, as everyone else interested found, that makers of bicycles were by no means satisfied of the practicability of supplying them with motors. They were disposed to wait and allow some one else to do the experimenting. Then Mr. Thomas stepped into the breach and determined to show that he could not only make the motors, but that they could be successfully used in connection with cycles. The cycle field was by no means new to him. He had been actively engaged in the production of Cleveland machines and knew every requirement of the business.

For two years he has labored unceasingly in his demonstration of the success of the motor bicycle. He has spent a great deal of money on advertising, has had salesmen and demonstrators on the road, has made the name of the Auto-Bi known from Maine to California and has even gone so far as to have made extensive foreign shipments. Having accomplished all this and demonstrated to all cycle makers not only that motors can be successfully applied but that the Thomas motors are especially suitable, he has determined to resume his old position and devote his time and attention to the production of motors for other people rather than follow up the business of motor bicycle manufacture. He believes that one branch of the business is all that one concern should try to attend to and has been actuated, no doubt, by the knowledge that a cycle maker would prefer to buy motors from a concern which devotes its attention to that line only rather than from a competitor, as they were bound to regard the old company. And so the Thomas company has disposed of its cycle department altogether. It will make motors exclusively, for bicycles, tricycles, automobiles and launches and in greater variety than it has done heretofore.

Until now the company has made small motors only. Hereafter the field of operations will be extended and motors will be made in the following sizes: Air cooled, 1½, 1¾, 2¼ and 3½ horse-power; water topped, 2¼ and 3½ horse-power; water jacketed, 3½ and 5 horse-power; water jacketed twin cylinders, 7 and 10 horse-power.

The facilities of the company have already been described in MOTOR AGE. They are of the finest for accurate and interchangeable construction. The company guarantees its motors and assumes all responsibility, similar to the guarantee of the tire and accessories makers. From information supplied by the company it is learned that the 1½-horsepower motors hold the world's records for speed and have the record for economy, having made 1,000 miles at an expense of $1; have the record for utility, having accomplished on a business trip, with frequent stopages, 202 4-5 miles in one day; and hold the record for repairs, having made 2,800 miles without repairing, accomplished by a very prominent Canadian physician.

The change in the conduct of affairs does not mean that the Auto-Bi, on which so much money has been spent, is to be allowed to suffer. If Mr. Thomas was the father of American motor bicycles, E. L. Ferguson is a close relative. He will manage a new concern to be known as the Auto-Bi company, which has purchased from the old company the right to the name and goodwill. For the present the new concern will continue at the old address, but this arrangement, it is understood, is temporary and will extend only until such time as the Auto-Bi company can secure suitable quarters. Mr. Ferguson, who understands the requirements of the business as thoroughly as any man in the world, will have the assistance of George W. Sherman and E. J. Edmonds, who, as traveling salesmen, have been with the company since its inception.

LESSONS OF THE ENDURANCE TEST

The following communications are replies to general invitations to manufacturers to report the causes of delay during the endurance run, the time consumed by accidents or break-downs, and lessons which have been learned as a result of the test:

The Haynes-Apperson Co.:—Regarding the time the two Haynes-Apperson machines made between Fonda and Herkimer, will say you must have overlooked the records on this section, or the information you had was incorrect. Our machines averaged 12 miles an hour in all controls except from Lyons to Rochester, when B-4 was delayed 30 minutes in the city of Palmyra and arrived in Rochester at 5:09 in the evening, making the time in a small fraction less than 12 miles an hour. The machine operated by Elmer Apperson had no delay of any kind during the entire trip and averaged 14.78 miles an hour. We have no record of the time we started from Fonda, though believe it was at 1:18, and both machines arrived at Herkimer at 4:08. B-5 left Fonda at 1:08, making the run of 37.7 miles in 3 hours. The machine B-4 made the time a little faster than B-5, arriving at Herkimer at the same time.

According to the best figures we can get, both B-4 and B-5 have made the best general average of any machines in the run with the exception of the Panhard racer operated by Mr. Bishop. The delay which B-5 received in the city of Palmyra was caused by the breaking of a defective weld in the steering arm, which was quickly repaired.

We received no experience from the endurance contest which would serve to teach us anything of importance regarding the building of our machines. The machine B-4 ran from our factory to New York city, 978 miles, at an average speed of 13 miles an hour, and then immediately entered the endurance test and ran back to Rochester on an average of 14.8 miles per hour, a record which we do not believe has been equaled by any American machine.

The principal criticism we have to offer upon the performance of our own machines was our inability to get rims which would support the tires over the rough roads encountered in a run of this kind, and also to get tires which are perfectly reliable under these conditions. We did not have any trouble with tires ourselves, but saw so much of it with other people all around us that it makes us wonder if a reliable tire will ever be made. We might add here, that we did not take an extra tire with either of our machines and did not require new tires on the run. We were using the New York Belting and Packing Co.'s tire, which is made extremely heavy and more suitable for a severe demonstration of this kind than any other tire we know of in the country.

Remarkable Freedom From Breakage

Ohio Automobile Co: We have not by us the records of the three Packard vehicles entered in endurance test by their owners. The two machines entered by the company got into every control on time and our very distinct recollection is that every one of the three other machines also made every control before it was closed. We are certain that it is some mistake of the timekeepers if any of our vehicles was not properly reported at control.

The only accident of any account which happened to our machines was the breaking of one axle on one of the privately owned carriages. A spare axle was put in and the machine proceeded with a loss of less than two hours' time on this account. We found on investigation that the axle which broke had been previously bent by a collision and had been straightened cold. This straightening doubtless developed a flaw, and it was at this point that the axle gave way. The only other troubles we had with our machines were the rolling out of a couple of tires. We had no punctures or ordinary tire troubles, but the wet weather and awful conditions of the roads gradually worked these tires loose from the cement and a sudden wrench pulled

them out. Spares were put on and but slight delay was occasioned.

Thanks for Universal Courtesy

The George N. Pierce Co.: The story of the endurance run, so far as our vehicles are concerned, is a short one. Vehicle No. 7, driven by Mr. Ferguson, our designer, and carrying a helper with him, met with a misfortune in the shape of a broken axle in the first control. As he did not have a spare part with him, it was necessary to have one made at Peekskill, and the delay incident thereto threw him out of the first control at Peekskill. He was, however, able to continue and arrived at Albany before the night control closed. the same wagon worked along steadily and satisfactorily until caught in a heavy rain between Syracuse and Rochester. At which time he lost two controls, which were due to the heavy rain causing short circuits. With these exceptions, the run through to Buffalo was made in an entirely satisfactory manner and at an expense for gasoline and repairs of $7.05, the gasoline being figured at the retail price of 20 cents per gallon. Nothing happened to the wagon beside the axle repair above referred to, which could not be taken care of by the occupants of the wagon.

Wagon No. 8, driven by P. P. Pierce, made a magnificent run from New York to Utica, but in passing through the streets of Utica the wagon was damaged and tipped over by running into a trench in the pavement. This accident broke an axle, one of the guards and a lamp, but otherwise the wagon was entirely fit for service, and the axle was replaced at a local shop, but the noon control at Oneida was lost, although the night control at Syracuse was made in good time. This was the only control lost by the wagon. Had it not been for the unavoidable accident, this wagon would have certainly come within the requirements of the first class mention. The total expenses for this wagon, including gasoline and the axle repair above referred to, figures $7.00. We give you these figures and you may make such use of them as may to you seem wise.

These little wagons showed their ability to withstand hard work which knocked out many of the larger machines, and with a weight and a horsepower far less than anything else in the run. They demonstrated their entire fitness, from our standpoint and from a mechanical standpoint, and we believe that they have made a very remarkable showing and have proved that their design and construction are all that could be desired. In figuring these costs, of course, we have not figured on any depreciation. It is well to understand that with the exception of the axle repairs referred to, the entire work of caring for the wagon in every sense was very easily done by the drivers and passengers.

We are glad to say that they were able to surmount every hill on the line and never required any pushing or towing; nor was any general overhauling required. That they should come through to Buffalo in working order was a great surprise to the other participants in the race, but that they should come through to Buffalo with so little expense, so little trouble or damage, is certainly a very remarkable performance in view of the terrific state of the roads.

As to the special incidents of the trip, there was apparently only one that was of any sort of interest and that was the universal courtesy and consideration shown, as well as interest evinced by everybody connected with the race, with what they were pleased to term the "little fellows," for all of which we wish to make acknowledgment.

Mistakes to be Corrected

White Sewing Machine Co.: We take pleasure in enclosing herewith a copy of the times of departure and arrival of our four machines in the endurance contest, taken from the time books of the operators. It is quite evident that there was a misfake in reference to the machine in the records of the Automobile Club of America, as none of our machines at any time during the trial failed to go into the control before it was closed. The club has sent for our time books with a view to correcting this mistake.

If you will look over the list which we enclose you will notice that our machines arrived uniformly quite early and promptly with the exception of A-11 going into Syracuse. This was our light runabout, which was equipped with very light rims, and after two days of heavy mud plugging, the

spoke nipples began to pull through same. Our Mr. R. H. White, however, was able to make a road repair on them, and ran the machine into Syracuse at 8:45, before the control was closed, and where a more permanent repair was made for the next day's run; but the same rim, etc., was used and there was no change made nor was A-11 towed into Syracuse as one paper stated.

We think if you will look over this record you will see that the performance of the machines with the exception noted above was uniform and consistent. Outside of this there were no repairs and our machines did not suffer a minute's delay on the run with any difficulty with the tires. We had but one puncture and that happened before leaving the control and was promptly repaired, occasioning no loss of time whatever.

A Doctor's Tribute

Dr. M. A. Carman writes: Through the courtesy of Jefferson Seligman I accompanied H. P. Maxim on the New York-Buffalo automobile endurance test in Mr. Seligman's Columbia gasoline runabout, and I wish to express my opinion of the remarkable performance this vehicle made under the skillful guidance of Mr. Maxim. I was probably the only one on the trip who was not directly interested in the outcome of the contest from a manufacturer's standpoint.

The vehicle, I am informed, is only of 4½ horsepower, but its powers of endurance proved greater than many of double the horsepower, which we left behind on the trip. Except for the noon and night controls we did not stop the vehicle more than a half dozen times during the entire run of nearly 400 miles, once when we were asked to render assistance to a contestant in trouble, and the other times for slight adjustments made necessary by the changing conditions of travel. The most noteworthy achievement of the trip, in my mind, was the run from Syracuse to Rochester. The roads between those places were the worst I have ever seen, running over marshes flooded by the storms and over a series of grades and treacherous openings in the road, which were frequently hidden from sight. Over this section of 87 miles we ran without a single stop, except for the noon hour, and reached Rochester long before several of the 1-horsepower machines.

In hill climbing Mr. Seligman's Columbia made an equally strong showing, and I have been informed that if the contest on Nelson Hill had been awarded on the basis of horsepower and weight we would have taken the prize.—(Signed) M. A. Carman, D. D. S.

Says He Missed no Control

The Winton Motor Carriage Co.: I do not know where you got your information regarding the stoppage of our carriage, B 32, between the Hudson and Albany control, and wherever you received it, it was wrong. I happened to drive the carriage myself over that control and beg to say that we arrived in Albany before the control opened and if I remember correctly we were fifth in the line as the carriages were lined up in front of the Stanwix Hall, coming in just before the Haynes-Apperson and the white Gasmobile surrey. I might add that this carriage I put in the run on about 10 minutes' notice. It was a brand new carriage and had never been run. The 12-horse carriage which I had depended upon running did not reach New York, having been lost in transit together with the racing car of Mr. Winton, which you will note did not start. The carriage we did start was a stock 8 horsepower carriage here for sale and rather than not be represented in spite of having paid two entrance fees we hurriedly started this carriage out. For your information I want to say that we had not one trouble all the way to Rochester with it.

We occasionally washed the mud out of the inside but that was all. We did not even carry an extra tire. The carriage arrived in Rochester in good shape and as nearly as I can figure it came in well within the limit, notwithstanding a three hour stop in one control for us to help out an operator of a Winton carriage who was an entire stranger to us and who was not in the run at all, but who was out on a run by himself and had been unfortunate in starting on a rainy and muddy day and without much experience with his carriage.

Not such a bad record was it?

I do not know that you expect to publish this letter and so have not made a "rosy" account of the run. The facts are as stated and I think that we have a much clean-

er record as to repairs than any of the others from my own observations made on the run.—Percy Owen, manager eastern department.

Now as Good as Ever

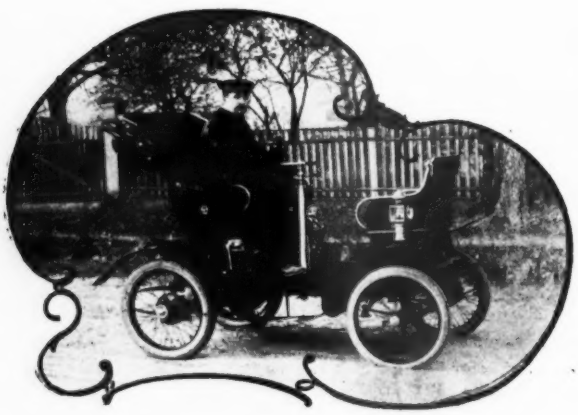
The Autocar Co.: There seems to have been some misunderstanding regarding our carriages and the time taken at the various controls, particularly between Syracuse and Rochester. We beg to state that our car finished at Rochester within the time specified by the rule of the club. This was the car B 27, which was driven by Mr. Clarke. The car which the writer (Mr. Morgan) drove, B 48, and the one which won the hill-climbing contest, was disabled just out of Syracuse, and was 3 hours late, owing to repair necessary on the road. We would state, however, that B 27 made the run within the time, as above specified, and not only that, but went straight through to Buffalo, and is running to-day in perfect condition.

Stearns in the Test

George M. Barnes, vice president of the Stearns Steam Carriage Co., is pleased with the showing the Stearns carriage made in the endurance contest. The machine covered the distance from New York to Rochester, 394 3-10 miles, in 32 hours and 21 minutes. He says the run for the first 4 days could not have been better under the conditions that existed. Not a minute's time was lost during the entire trip until after leaving Syracuse. The Stearns carriage was at the control Friday morning ready for the day's run. After leaving the city and getting about 2 miles out, the steam pressure dropped suddenly. Mr. Trebert, who was operating the machine, discovered instantly that the boiler had been scorched. This was caused by a defective check valve in the water glass connection giving a false water gauge. The accident caused a delay of 7 hours. At 3:10 in the afternoon Messrs. Trebert and Griffin started on their journey to Rochester, reaching Lyons at 7:05 and Rochester at 11:30 p. m. The Stearns people had but one carriage entered, and it was unnecessary for them to have an army of mechanics along the line.

In the hill climbing contest the Stearns carriage made the second best time in class B, covering the distance in 4 minutes and 2 seconds.

This company was unable to secure suitable space at the Madison Square Garden show, but will be on hand with a complete line of its products. Its machines will be under steam in the vicinity of the Garden, so that the public can have an opportunity of trying them out on the road.



NEW YORK-BUFFALO ON A MOTOR BICYCLE

BY CHARLES H. METZ.

New York to Buffalo on a motor cycle or automobile is not so much a question of miles as it is conditions. The 480 odd miles if laid down with good roads, would have been the easiest kind of a test for every vehicle competing; that such a large percentage of them conquered the conditions actually encountered, speaks well for the industry. My object in entering the contest was to observe the behavior of the various machines. I was well equipped for the occasion, for my 2¾-horsepower Orient Aster motor bicycle is a trustworthy steed, capable of starting from the rear of the line and passing the procession at any time, with the possible exception of one of the vehicles, provided the surface of the road was in a state where two wheels could be balanced.

Leaving New York about 18 minutes after the first vehicles, following the procession to the bridge, 7 miles, was uneventful, except for the fact that we were well watched by mounted police so as not to exceed the speed limit. One enthusiastic copper mounted on his bicycle took a fancy to me, for he tacked on to my rear wheel and bade me "let her out." I promptly obeyed the summons, so copper and I moved along the procession at a lively gait. I was hailed several times by bluecoats, but all I had to do was to point at my trailer and I got a free pass. But he soon got enough, and I was again in line, having moved up several places.

Over the bridge, and out of the city the motors were practically free from speed restriction, and they were cut loose, each operator anxious to make the next control well within the time limit, for a first-class certificate of an average speed 12 to 15 miles per hour was the prize sought, and it mattered not how much too soon the contestant arrived at the checking point, so long as he did not violate the regulations of the authorities, which for the occasion were very unrestrictive.

On nearing Yonkers I got off from the direct road and put on all speed in order to overtake some of the flying autos, but for some miles I failed to see the trace of any. As I entered the town I began to meet wild eyed, excited drivers, so I concluded that I was going in the wrong direction, and quickly turned about. Through the business portion of Yonkers, the asphalt pavements were covered with slimy mud. But for the timely advice of the police guards to be cautious, a spill might have occurred. Along the beautiful roads, on to Tarrytown, we speeded. At every turn in the roads crowds of people had gathered. This proved to be an excellent index to keep the right road, for although an accurate description of the route had been provided, it did not seem practical to have the book open before one in order to follow the directions. Notwithstanding the efforts of the spectators to

Charles H. Metz.

keep us on the right road, we would occasionally fly past the proper turn, and be compelled to retrace on to the right road.

It was one of those errors which cost me a great deal of time, and considerable trouble afterwards. This happened on leaving Tarrytown. I had run past a sharp turn in the road, and in order to retrace quickly, I ran down a steep, rocky grade, when suddenly I heard a sharp re-

port like a pistol, and felt the escaping air at my feet; next, I was bumping along on a flat tire. If the reader has ever had victory snatched from his grasp, he can imagine my feelings when I beheld a 2-inch cut right through the tire. I had provided a repair kit for ordinary punctures, but such a rupture was unthought of, and I had doubts as to my ability to repair it, but I could not think of being among the missing at the very first checking control, so I went at the repair with determination. By using plenty of fire tape and patching the inner tube with all the rubber at hand, I finally had my tire pumped up again. I breathed a sigh of relief, looked at my watch, and found 50 minutes gone.

WANTED TO SEE THE CELEBRITIES.

During my hasty repairs at Tarrytown, I had an opportunity of noting the behavior of the various cars and motor cycles in mounting a short, stiff grade, at the foot of which I was unfortunately delayed. It was comical to note the remarks by the rurals, who were evidently out for spectacular sights; they would inquire about Vanderbilt and his Red Devil, the White Ghost, John Jacob Astor, etc. Many were interested in Anna Held, for it had been reported that this noted actress was to participate. W. K. Vanderbilt, particularly, was the individual sought for all along the line. I am sure if he could have foreseen the disappointment to the inhabitants from New York to Buffalo, he would not have failed to put in an appearance.

I was now tail ender in the motor cycle class, all having left me at least by 30 minutes, but there was yet 17 miles to Peekskill. The roads were sandy and hilly. These conditions suited me, for I knew that my motor would plough through. It was within a minute of 11 o'clock when I again started;—on we flew, motor and I, car after car we passed, and soon came up to a lone motor cyclist who had come to grief. The frame of his machine could not withstand the bump-bump-bump of those rough roads, and he was seeking the railroad station comfortably mounted in a hay wagon.

REACHED THE FIRST CONTROL.

It seemed rather cruel to pass a brother in distress without offering aid, but this was an endurance test, and I did not feel badly to have repassed one of my competitors, but there were three more ahead, each intent upon getting that control first. Within a few miles of Peekskill we came up with and passed two more, and shortly after the last competitor in class D, so in triumph motor and I passed within control No. 1, Peekskill, at 11:35 a. m., having done the 44.6 miles in 3 hours, 17 minutes, including 50 minutes for repairs, and slowing down within the speed control of 8 miles per hour through New York, Yonkers, Ossining, and Peekskill.

NELSON HILL UNCONQUERABLE.

Nelson Hill had been the dread of every competing vehicle, and the dread was stimulated by frequent reference to it by those familiar with it in the vicinity. The plain diagram and description furnished us, appeared easy enough to conquer; in fact, we have hills, rough ones, at home, whose gradient exceeds Nelson; but this monster has peculiar conditions, well suited to overthrow motive power, and I do not feel at all chagrined in the fact that I was unable to "mote" over it. I succeeded in pushing my machine over, which was the unhappy lot of every motor cyclist in the contest. Some of the autos fared even worse, for, in addition to the power of their motors and drivers, the aid of horses was indulged in, and several had to be pushed over running backward on the slowest speed. This hill was the only one on the entire course which I did not surmount with ease.

SOME EARLY DISAPPOINTMENTS.

At the top of Nelson Hill time was taken (2:41 p. m.) and we were off for Poughkeepsie, 40 miles away, to checking control No. 2. Being now in the lead of the motor cycle class, we indulged in a little swift riding to overtake some of the first vehicles. This was rare sport. The roads were mainly of a hard surface, winding up and down hill through woodland, conditions admirably suited to the taste of automobilists. Occasionally we would pass a car by the roadside, come to grief through accident, or otherwise. The disappointed look of its drivers could be plainly noted, for it meant, in some cases, inability to continue in the run, or the loss of a certificate for that period.

Rushing down a steep, rocky grade my

belt rim came in contact with a large boulder with such force as to flatten it for 8 to 10 inches, and it was thrown out of line so as to hit the frame vigorously at each revolution. I did not know at once what the trouble was, but on stopping found that I could make a temporary repair by using my wrench to straighten the rim. This afterwards caused the loss of a control, but for the present all went well.

THROUGH CLOUDS OF DUST.

We were now beginning to experience what I have read about in the recent Paris-Berlin automobile races, viz:—riding through clouds of dust. On approaching a vehicle within quarter of a mile, the dust cloud would be encountered, and the nearer the approach, the thicker the dust, until within 50 yards or so, when it would be impossible to discern either road, vehicle, or anything else, so the only thing to do was to follow on blindly until within a few feet, when by the good grace of the drivers, providing you had lung capacity to make yourself heard, you were allowed to pass if you had speed, and the road was wide enough for two. In this manner I passed many of the flying cars, but there was always a chance for a serious mishap, for in many places the roads were rough with boulders, uneven bridges, and small wash-outs. Many a "whang" did we get, clear to the steel rims, notwithstanding the 2½-inch tires, but this was still an endurance test, and the endurance was piled on to the limit. Several times I experienced the sensation of soaring through the air when machine and all would leave the ground for a number of feet. Once, in particular, coming down a grade following a cloud of dust and passing on to a wooden bridge unobserved, slightly raised from the road surface, I believe machine and all jumped at least 12 feet. It is strange what a human companionship one feels when he is safely carried along under such exciting conditions. I frequently held conversations with my trusty steed, and they usually ran something like this:—"Look out, now,—whoa, —well done,—look—out,—ah!—good,—hold up there,—careful,—jingo," etc., etc.

Poughkeepsie was reached at 4:19 for the night control; time of leaving Nelson Hill, 2:41; distance, 37 miles. This I consider one of my best runs.

Leaving Poughkeepsie at 8:44 a. m. on Tuesday, good roads were encountered through Hyde Park, Staatsburg, and Rhinebeck; nevertheless the dust was as bad as ever, and it was during this run to Hudson that the more serious accidents occurred to a number of the vehicles. Several, we passed, completely upside down. In one case a car was ditched owing to a rickety bridge giving way, and another was overturned because the road would not permit more than one vehicle passing at a time.

I had an experience of this kind. As I was endeavoring to pass a car, side by side we came upon another car; with all three abreast. I was forced into the ditch, the roughness of which threw both feet into the air. It was on such occasions that I recalled having left behind loving ones at home to whom I had promised to be careful, and above all, this was to be my vacation and no racing was to be indulged in. Vacation, it certainly was. I never so thoroughly enjoyed myself as I did on those first two and a half days of the trip, for what greater delight can one experience than by passing swiftly through space without muscular exertion, and just enough excitement in watching for dangerous places in the road to keep off monotony.

OVERTOOK AND PASSED EVERYONE.

I had ridden many hundred miles on motor bicycles previous to this endurance trip. I had never experienced a fall from the machine, so looking forward to possible advents I wondered whether I would have a clean record at the end of the week. Under fair conditions I think I should, but I was now not far from my first experience as a rough and tumble acrobat. But on to Hudson we went, arriving at the noon control without mishap, having started from Poughkeepsie in fifty-seventh place, 44 minutes behind the first vehicle, and finishing, I believe, sixth or seventh at Hudson, scarcely 10 minutes behind the first vehicle, having passed fifty en route. Should any reader doubt the capability of my little motor as a distance destroyer, he has the privilege of writing to any contestant, every one of whom has been overtaken and passed during some stages of the run.

We are now in Hudson. Having brushed away part of the dust and scrubbed the surplus dirt from face and hands, just a

plain sandwich was partaken of, for my time was taken up looking around for the various cars as they put in an appearance, and no time left for dinner.

DUST CAUSES DELAY.

The record of my book leaving Hudson is 1:48. I noticed my machine was not doing as well as usual, and this worried me somewhat, for it now began to rain, but very moderately. I hardly knew what was best to do; I could not exceed 12 miles per hour with all speed on. Should I stop and look things over? The rain might increase, and make roads slippery; so I decided to go ahead, thinking that things might right themselves, but instead, they were getting worse, and as the last straggling autos passed me I was obliged to seek shelter from the rain in a barn to make hasty investigation. I found, in cleaning the machine at Hudson, I had wiped sufficient dust into the vent of my gosoline tank so as to retard the free flow of the fluid:—so my trouble was traced to the fact that not sufficient gas was generated in the carbureter to allow strong explosions in the motor cylinder. This was quickly remedied, but now the roads became somewhat slippery and consequently dangerous for high speed. But on to Albany we journeyed, and now comes the sad tale of my first fall from a motor bicycle.

GROUND AND LOFTY TUMBLING.

In crossing the Greenbush bridge into Albany, the trolley rails had become slippery from rain and mud. I was riding between the rails on the right, with a farmer's dray approaching me on the same track. I motioned vigorously for the right of way, for I saw my predicament in attempting to cross the rails at a sharp angle. I had every reason to expect my friend to turn out, but I presume it was a case of stubbornness coupled with enmity, which, unfortunately, is displayed by some. Could I have foreseen this sooner I could have come to a stop, but we approached each other so close that I was compelled to cross the rail, and in so doing a wheel slipped and over we went. I had observed the manner in which trick riders fall in their comic imitations of learning to ride; I did this as gracefully as possible under conditions of mud and heavy machine, and fortunately neither of us were hurt, save a slight bruise on the forehead and a bent crank on the motor. The latter prevented my remounting and starting immediately, for I could not get a revolution of the cranks without striking the frame, but I was helped out of my trouble, for the small boy was in evidence, and after a few sympathetic remarks, such as "Mister, did you hurt you?" "Did your wheel break?" "We told that farmer to look out," etc., I mounted the wheel, the obliging boys pushed until the motor started, and away we went into the control over the exceedingly slippery pavement, looking like a battered veteran, into the second night's control at Albany, N. Y. Time of arrival, 3:49, not bad for an afternoon of adverse experience.

SENSATIONS OF THE EVENING.

Except for the shaking up which I experienced in my tumble, I felt not the least tired or sore. I began to wish that my occupation could consist of these daily runs of 40 or 50 miles morning and afternoon: my appetite was ravenous, and as we sat at dinner in Congress Hall, a party of us relating our experience, I was in a mood of peace and good will to everyone, but had one strong desire, and that was a bright clear day for the morrow.

In the evening I repaired the bent crank with the aid of what tools the engineer could furnish. I also looked over machine, and cleaned it, for I was now getting near my old home in central New York, where I knew friends would be expecting wonderful things of me, and I desired to have everything in the best of condition. I had fully made up my mind to pass first into the next three or four controls, provided conditions would permit. With what success I carried out this determination we shall see later.

FEARS FOR THE MORROW.

I had one misgiving, and that was getting out of Albany without the humiliation of pushing over State street. My machine was kept over night at the hotel in the lower end of the city. State street has quite a respectable grade, which any competitor resident, or one who has seen it can vouch for. With the cobble pavement wet and slippery I would be doomed. Several times during the night I had determined to push the wheel, under cover of darkness, around through some of the side streets to the

starting control on top of the hill, but finally determined to wait until early morning and make the attempt.

On awakening, imagine my mortification to be greeted with showers from the heaven above, but my grief was not yet to come, for soon the clouds broke away, and a most cheerful morning greeted the drivers as they repaired to the starting point. How different would have been my story a little later on, if the rain had ceased for good at this point.

UP THE HILL WITHOUT PEDALING.

Mounting at the hotel, I made for the starting point. State street did not now worry me, for the surface of the pavement had dried sufficiently to obviate danger of slipping. I knew that I could easily mount the grade with assistance from the pedals, but I hoped to mount it by motor alone, for here is one of the main thoroughfares of this Capitol City, and a motor which had to be pushed up would not create a kindly impression on the spectators. Grandly the motor took hold; up she pulled over the long, steep grade. It was done so easily I was sorely tempted to repeat the performance several times, but I let well enough alone, and then got my machine in line as near as possible to the head of the procession starting out of Albany. I was none too soon, for thirty-seven vehicles were lined up ahead, and it was 11 minutes after Mr. Bishop's white Panhard ghost, the first car out, had started that I found myself again on the road.

IN A CYCLING PARADISE.

Several miles out on fairly good, hard roads were covered in quick time. Once my heart was in my mouth; my machine began to slow down, and finally stopped. I was not long in discovering that I had neglected to open the gasoline valve leading to the carbureter. I had run the 2 or 3 miles on what fuel remained in the carbureter. From now on I was in cycling paradise. I had procured a side path plate which gave me the privileges afforded by such side paths, and the manner in which I passed the thirty-seven vehicles ahead must have turned them green with envy.

Let me state right here that motor cycling on a good smooth path, with a motor that will mote, is a dream beyond description. It matters not the width of the path; the steady pulsation of the motor, entire freedom from shifting of the body through pedaling, the speed and stability renders it possible to guide with accuracy astonishing when first experienced. I believe I could ride for miles without wavering an inch from a path not exceeding 4 inches wide, in fact, the path for long stretches would measure scarcely over 6 inches between grass, and through its winding, crooked way on we crept like the shadow of a cloud.

TROUBLED BY STRAY DOGS.

Schenectady was reached in a twinkle. Here I learned that I was third in line, for I was repeatedly informed that there were only two ahead. Through Schenectady I slowed down, not quite to 8 miles per hour, but a respectable pace. Dogs, there were galore; I barely missed several, and finally ran over one. In his excitement he jumped out to assert himself, but forgot to turn out of the way quickly enough. Both wheels and pedal hit him, but he seemed unharmed, except that his jubilation had been somewhat dampened in ardor.

AMBITION REALIZED AT LAST.

Two more vehicles to pass and the head of the procession was mine. I well knew which would be one of the two. Soon C 55 came into view, and the white Panhard was my victim. Unfortunately, I had hardly overtaken them when they came to a full stop. Out jumped Mr. Bishop directly in front of my machine, and but for an unearthly yell which I let out, causing him to jump again, I would have ridden him down. I was now leading the bunch and scarcely attracted any notice as I passed through Amsterdam, on over the famous Tribes Hill into Fonda, full 20 minutes ahead of the next vehicle in. The last 12 miles were ridden in a driving rain, and it was difficult to remain upright over the miserable round, cobble pavements of Fonda.

(Concluded next week.)

INTERESTING TALE OF THE A. B. C.

The American Bicycle Co. was recently called upon by the Federal Industrial Commission, whose duty it is to investigate the effects of trusts, to make a statement of its affairs. The following, the affidavit of Col. George Pope, tells an interesting story of the formation of the company:

"The American Bicycle Co. was incorporated on May 12, 1899. Their business is the manufacture of bicycles and automobiles. They bought the property of forty-eight concerns who had been engaged in making bicycles and bicycle parts. They did not buy the stock of previously existing corporations, but took conveyance of their real estate and personal property. The organization of the company was the work of A. G. Spalding. He personally bought the properties from the previous owners on such terms as he could make by private arrangement and sold them to the American Bicycle Co.

"The amount paid by Mr. Spalding for each plant was a private matter between him and the former owners, and was not known to the owners of the other plants. I believe, however, that the method and terms of payment were similar in all cases. The owners received in each case 30 per cent of the appraised value of their property in cash, or, at their option, in 5 per cent debenture bonds of the American Bicycle Co. at 92½; 30 per cent of the appraised value in preferred stock of the American Bicycle Co., and 50 per cent in common stock. Speaking roughly, the debentures and preferred stock represented the physical assets of all kinds, and the common stock represented the intangible assets, including patents, good will, etc.

"The plants were appraised for the purpose of purchase by the American Bicycle Co. by the American Appraisal Co., of Milwaukee, and their value fixed at more than $9,000,000. The books, accounts receivable, etc., were gone over and valued by a chartered accountant, who had been auditor of the National Board of Trade of Cycle Manufacturers, and their value fixed at more than $7,500,000. All these valuations were made as of the date of the last annual inventories of the several companies, which were generally made in the later months of 1898.

"The plants were taken over by the new company near the end of 1899. The net earnings, made in the interval, were estimated at over $3,500,000. This sum, added to the estimated values of the properties at the times of the last inventories, gave an estimated cash value of the total assets of more than $20,000,000. The authorized capital of the American Bicycle Co. is $35,000,000 preferred and $45,000,000 common stock, of which has been issued $10,000,000 preferred and $20,000,000 common stock, and there has also been issued $10,000,000 5 per cent 20-year debentures. The debentures were underwritten at 92½ and were taken at that rate by the underwriters, so far as they were not taken in payment for property bought. When the promoter had turned over to the sellers of the property so much of the preferred and common stock as was required by his bargains with them, the remainder was left in his hands as profit.

"The earnings of the properties before consolidation were stated to have been, in 1895, about $5,119,000; in 1896, abonut $7,763,000; in 1898, about $3,329,000. The net profits for 1899 were estimated at $3,894,000.

"The chief reason for desiring the consolidation was, perhaps, the great increase of competition in the trade. The business had been very profitable up to 1895, and in that and the following years a great number of new people embarked in the business. Many of them had no adequate capital. They went in expecting to make up their machines and sell them and get their money back in two or three months. They found that this could not be done. They were pressed for money, and they or their competitors were compelled to throw their machines on the market and get cash out of them, even if they got no profit. It is true that the strongest concerns in the trade still made some money every year, but with the constant and increasing cutting of prices a condition was approaching in

which it was feared that even the strongset could make no profit. There was no cohesion in the trade as there is in some older trades. There had been a bicycle board of trade, but it had gone to pieces. Competition was of the cut throat order. No doubt the example of the combinations that were forming in all kinds of business had also a great influence on the course of the bicycle makers.

"There are, however, important direct savings which the consolidation of ownership and management has effected. Important and expensive patent suits were pending between the different manufacturers. The introduction of community of interest with common ownership put a stop to much patent litigation. There was also some further gain in permitting valuable patents owned by any one concern to be applied by all.

"There is an important saving in administrative expenses from the diminution of the number of officers. Each factory had formerly a complete executive organization, usually a president, a vice president, a secretary and a treasurer. These officers are all replaced now by a single manager; the full executive organization exists only at the central office. All buying is concentrated in the hands of one officer and his assistants. This not only saves energy and expense, as compared with the former system of independent buying for each plant, but it also enables the company to get the very lowest prices. There is a further saving in carrying a smaller aggregate quantity of supplies than was formerly carried by all the factories together. Centralized management of distribution makes this possible. By this means interest and depreciation of stock on hand are saved.

"Concentration of manufacturing activity has reduced the actual cost of production. The company have closed eight bicycle plants, besides turning two from the production of bicycles to the production of automobiles. At first thought it may seem that this saving is gained at the expense, in some degree, of the men formerly employed at the closed plants; but I am confident that if the American Bicycle Co. had not been formed quite as many plants would have been closed through the failure of the companies who owned them. Moreover, while it is true that the men at the plants which have been closed had to go into other employment, the plants have been sold or leased and are used for other purposes, and men are still employed there. Without regard to this consideration, I believe that about as many days' work are given in a year by the American Bicycle Co. as were given by their predecessors. The employment is steadier. Before the consolidation there was much temporary shutting down on account of the excessive capacity of the plants. The factories would run full, and perhaps work overtime, in the winter, but during the summer they would be almost idle. We have not been able to altogether do away with this condition, but are trying to make arrangements so that we can run pretty steadily throughout the year. Steady running is better for the employer as well as for the employee. If a factory turns off a large part of its force in the spring or early summer, it can get back only a part of the old men in the fall. It has to take on new men and teach them and teaching new men is an expensive and wasteful business.

"The expense of selling has been considerably reduced by the consolidation. The American Bicycle Co. advertise freely, but on account of the enormous size of their advertising contracts are able to get very low rates; even lower rates than the Pope Mfg. Co. and the Gormully & Jeffrey Mfg. Co. obtained, and they bought advertising at lower rates than any others established in the business. There has been some diminution of the number of traveling men. The company now employ in the busy season about 85 per cent of the number employed before the consolidation.

"I believe that the efficiency of management is higher than before, because it is the policy of the company to pay good salaries and to select the best men and hold them. There is a manager at the head of each factory and a manager at the head of each of the nine sales departments. The factory manager is responsible for the production of goods. He has absolute authority in running the factory. He makes his record on economy of running, together with the quality of goods turned out. The sales manager receives goods assigned to him from certain factories, the selling price being determined by the board of directors. He hires his own salesmen and conducts

the sale of his own goods. He makes his record on the quantity of goods sold. The company make comparison of the results obtained at different factories, and base upon the results an estimate of the efficiency of the several managers.

"There has been no change during the last two years in the price of 'agency goods'—that is, bicycles which are marketed through established retail agencies. On jobbing goods there is a tendency to stronger prices. The cutting of prices which resulted from the severe competition has been stopped. The company, therefore, still make their special lines of goods at specially low prices for mail order houses.

"I suppose that the American Bicycle Co. sold about 65 per cent of all the bicycles sold in the United States in 1900; but this is scarcely more than a guess. There are many small shops which buy a few parts and put together a few bicycles during the winter—5, 10, 50 or 100.

"Our export trade is attaining considerable importance. The bicycles exported are mostly of the better grade, and many of them have even better and more expensive equipment than is used here, and on this account are sold at actually higher prices. In general, our export prices are based substantially on wholesale prices in this country.

"There has been no general change of wages since the American Bicycle Co. was formed. The executive officers have taken no action on the subject, but have left it entirely to the local managers. The subject of trade unions has been treated in the same way. Even when the local managers have consulted the central office on this point they have been told that their attitude toward labor organizations is considered to be a matter for their own determination in their character as managers. Some of our shops are union and some are nonunion.

"The tariff has no effect upon our business that we are conscious of. We would not turn a hand over to prevent the repeal of the duty on bicycles.

"The automobile business is in such an undeveloped state that very little can be said upon it. The manufacture of automobiles is conducted by this company in separate factories, and the selling of them is also confided to separate agencies."

New York, Oct. 2.—(Special telegram.)—There is something serious and radical doing in the affairs of the American Bicycle Co. Common stock stands at 2½ today and bonds sold at 65 yesterday. The latest quotation for preferred was 10. A story is told here today, on the alleged authority of one connected with the company in an official position, that Vice Presidents Merselles and Col. George Pope are to be dropped and that Mr. Bromley will be the only vice president. Charles Walker, according to the story, is to be the head of the sales department and the only machines slated to survive are the Rambler, Columbia, Crescent and Cleveland. Your correspondent has just seen Col. George Pope, who denies that anything has been fixed or is possible until the meeting of the stockholders next Tuesday and of the directors the next day. He says that no caucus has been held but that more machines than those named will be continued and there will be four sales departments. Mr. Merselles was out and could not be found. Albert Pope, Jr., it is said has been dropped for good.

MAGNETOS FOR GASOLINE MOTORS

For electrical ignition purposes in connection with gasoline automobile motors, three types of batteries are used, the so-called dry primary, the liquid form of primary and the storage battery. The first named, as has been shown in an earlier article, is dry in name only. If it contained no moistened ingredients it would be worthless. Attempts have been made to produce a dry battery, but without great success. In the liquid form of primary battery of the open circuit type, it is not necessary to remove the negative element or electrode, when not in use, as it is in the closed circuit type to prevent chemical action taking place after the electrical circuit of the battery is broken. The open circuit battery may be briefly described as that type in which an electro-chemical action takes place upon the closing of the circuit, but in which practically no chemical action takes place when the battery is standing on open circuit, or not in use. The storage battery, which in reality is only a receptacle for electrical energy, from some source outside of itself, is to all intents and purposes the most satisfactory one at present in use, although slightly more expensive in first cost and maintenance than the other two forms. If its supply of energy gives out it can be readily recharged, from a light circuit, with proper resistance coil or lamps in the circuit. But it requires from 6 to 8 hours to recharge a battery of small size and capacity. This is one great objection to its use. The liquid form of primary battery has one great objection—the type generally in use is of low voltage and requires not less than eight cells, to be anywhere near equal to three storage cells. The cells are exceedingly bulky as well, occupying two to three times the room of a set of storage batteries of the same capacity. The dry form of battery was never intended by the inventors for any continuous work, such as is required in a gasoline automobile motor. Its principal uses are for door bells, annunciators, telephones, burglar alarms and other intermittent work with long intervals of rest between.

Any form of dry battery which is subjected to the work required of it for electrical ignition purposes in automobile use will either run successfully for a short period and then break down altogether, or else work intermittently for a greater length of time before failing altogether. If too great a drain is put upon it or too rapid action of the make and break of the spark coil used in connection with it occurs, it will cause it to polarize, and require a rest of from 5 to 10 minutes, and then it will be ready to work again for a few minutes, until another case of polarization occurs. Each successive time a little longer rest will be required, until the battery becomes entirely exhausted.

THE USE OF MAGNETOS.

To overcome these various difficulties, small dynamos or generators and also magnetos are used to generate electricity. They are driven either by a small belt around the fly wheel of the motor, or by a friction pulley pressed against the rim of the same. As the normal speed at which these small generators must be run is generally from 1,800 to 2,500 revolutions per minute, it is difficult to start the motor by hand, as it is practically impossible for the operator to turn the motor fly wheel fast enough to generate the current and voltage necessary to give a spark to ignite the charge in the cylinder. The much-abused battery has, therefore, again to be installed and called into use, to help the operator out of his difficulty.

A set of batteries are used in starting the motor. When the motor gets up to speed. the dynamo or magneto is thrown into the circuit and the batteries cut out. The electricity is then furnished by the dynamo or magneto.

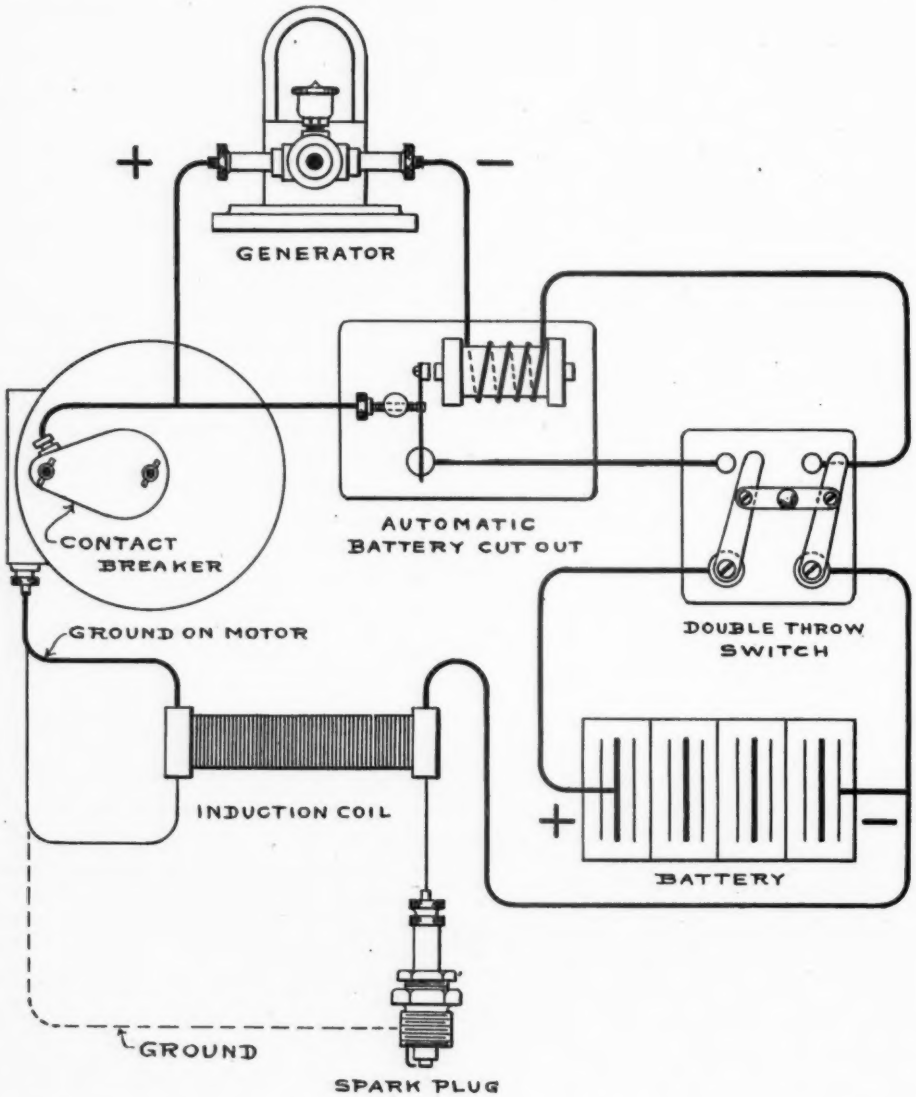
FAULTS OF THE GOVERNOR.

To dispense with the use of batteries in connection with dynamo or magneto, some manufacturers attach a small centrifugal governor to the dynamo or magneto, which in such a case is so constructed as to give sufficient current strength and voltage to

operate the motor at a very low speed. When it overruns this point the governor automatically throws the dynamo pulley out of gear with the rim of the fly wheel.

One objection to this combination is that it limits the motor to the speed at which the centrifugal force throws the governor into action and cuts out the dynamo. Below this point the motor can be operated, but not above it. Adjustment of the governor is not practical while the motor is running, and further, is not desirable, as it would only introduce further complications.

As the use of batteries in connection with a dynamo or magneto, especially when starting up the motor, present very desirable features, some form of automatic cut-out must be used to render the combination practical. It often happens, that from some unknown cause the motor will slow down suddenly. This has the effect of cutting off the electricity necessary for igni-



PLAN OF WIRING FOR SINGLE CYLINDER MOTOR TO USE GENERATOR AND BATTERY WITH AUTOMATIC CUT-OUT.

tion, the dynamo or generator falling below its speed limit, stopping the motor. The writer has seen gasoline automobiles equipped with dynamo or generator and batteries serve their owner a queer trick and one which must be expected if an automatic cut-out is not employed. After starting the motor by means of the batteries, the operator pushed over his switch lever on to the generator connection and smilingly proceeded to mount his snorting steed, when suddenly the motor slacked up, and before he could get at the switch, was stopped. He dismounted, unearthed his starting lever and proceeded as before. This time, he waited a little longer before throwing his switch off the batteries on to the generator, and with successful results. The explanation of this is simple. Nearly all types of small generators require, on starting, some little time to build up or accumulate sufficient electrical energy to produce the necessary current required, and, further, if allowed to fall a few revolutions below their normal speed will lose their potential or electrical energy far quicker than it will accumulate or build it up.

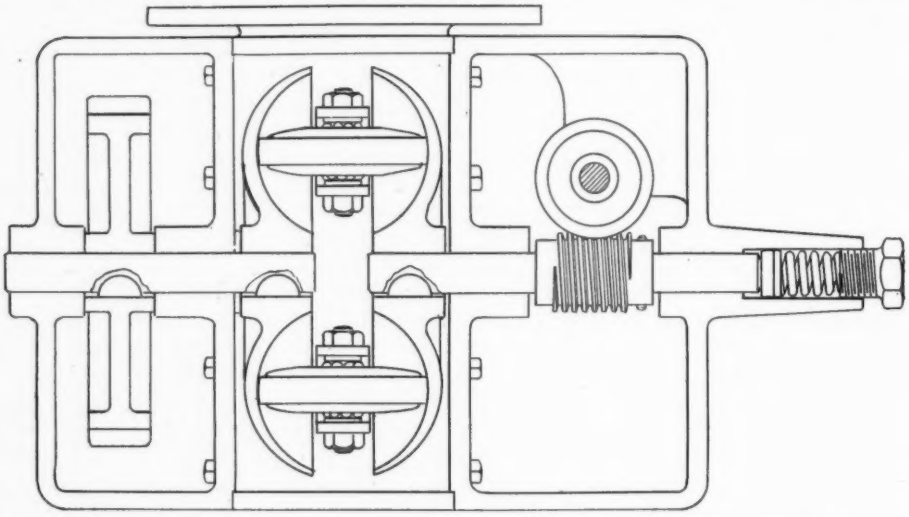
DESCRIPTION OF THE DIAGRAM.

To obviate these difficulties a plan or diagram is herewith shown of the wiring for a single cylinder motor to use both batteries and generator, with automatic cut-out. In starting the motor, move the double throw switch, shown in the drawing, to the extreme right. The motor can then be started by means of the crank or lever. As soon as the motor gets up to a speed sufficient for the generator to develop its proper voltage and current, the small magnet of the automatic cut-out attracts the hammer upon the contact breaker which forms part of the battery circuit, and cuts out the batteries. Should the motor at any time fall below its normal speed, by regulation or otherwise, the hammer upon the battery circuit contact breaker will be released, the battery current closed, and the battery will again come into play. As soon as the motor resumes its normal speed the battery will again be automatically cut out. The double throw switch and automatic cut-out shown in the diagram can be purchased at almost any electrical supply house, as they are used for other purposes, and are simple and inexpensive. The diagram shows clearly the connections between the generator and battery to the induction coil and contact breaker on the motor. Also the connections of the secondary wires to the primary wire ground on the motor, and to the spark plug. If it is desired to use this form of wiring for a motor with plain make and break primary spark, it is only necessary to omit the secondary connections, and connect the wire from the coil to the ground on the motor as shown and the other wire (shown connected in this case to the contact breaker in the ignition case) to the insulated contact in the explosion chamber of the motor.

A description and plan of wiring for motor with two or more cylinders will be published in a later issue.

A PROMISING FRICTIONAL TRANSMISSION

One of the most promising variable speed devices, embodying a frictional drive, is the recent invention of Ira H. Spencer, of Hartford, Conn. The distinguishing characteristic is the means whereby the pressure upon the frictional surfaces is varied in accordance with the load. In the construction illustrated the device comprises a suitable frame-work, including a cylindrical casing and two skeleton frames, the latter containing the main bearings. Two axially-



aligned shafts are journaled in these bearings. Two concentrically disposed driving and driven members having oppositely disposed concentric concaved annular adjacent faces are fixed to the inner ends of the above mentioned shafts within the cylindrical casing.

Two friction wheels or disks are pivotally supported between and engage the concave adjacent faces of the driving and driven members, preferably at opposite sides of the axis thereof. These disks are supported for rotation and for angular adjustment transversely of their planes of rotation, and in the plane of the arc described by the two concave faces of the driving and driven members at diametrically opposite sides of the common axis of the latter, with diametrically opposite peripheral portions of each friction wheel in contact with the opposing faces of the driving and driven members. These friction wheels, which are duplicates of one another, consist of a hub, provided with suitable bearings, and supporting a fiber annulus held in place between radially projecting flanges on the hubs by rivets or other suitable means. The supporting and adjusting means for the friction wheels are duplicates in form and consist of a short shaft extending through the friction wheel, a bifurcated hanger straddling the wheel and supporting the ends of the shaft. An adjusting shaft is journaled in a bearing on the casing and has a hinged connection at its inner end with the bifurcated hanger.

At the outer end of this shaft is secured a gear wheel meshing with a similar gear-wheel on the shaft connected with the other hanger, and one of these gears is provided with means whereby the same may be rotated to effect a concurrent rotation of the two shafts in opposite directions to secure proper angular adjustment of the two friction wheels. In order to maintain a predetermined normal frictional stress between the frictions wheels and the driving and driven members a reactionary thrust device H is provided in connection with the driven

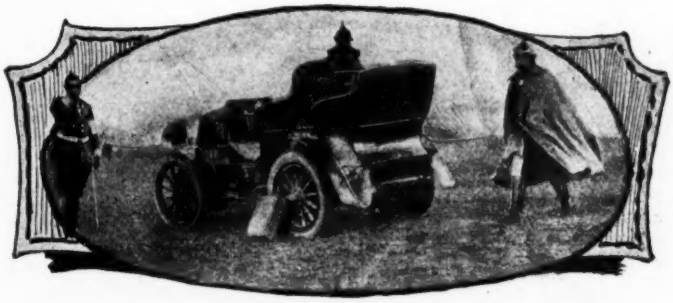
shaft. This device comprises a thrust member supported for reciprocatory movement in an enlarged recess, extending beyond the bearing of the shaft and having a fiber washer in bearing engagement with the outer end of the shaft. A spiral spring is located in the recess, bearing at one end against the thrust member, and at the other against an adjusting screw, fitting the outer end of the recess. This thrust device normally retains the driven member in working position with relation to the peripheries of the two friction wheels, and maintains a normal pressure, which may be regulated as desired.

The device for providing an automatic variation of pressure on the friction wheels in proportion to the load carried is shown in two forms. In the one shown in the illustration the driven shaft has secured to it, between the bearings, a worm, which meshes with a rotative member or power-transmitter in the form of a worm wheel fixed to a power transmitting shaft, journaled in transverse bearings secured to the frame work. This worm and worm wheel constitute an automatically effective device for increasing and decreasing the frictional stress between the friction wheels and driving and driven members, according as the resistance to which the power-transmitter is subjected increases or decreases.

Another form is used wherein a screw or worm is fixed to the driven shaft and a wheel having a spirally threaded hub meshing with said screw or worm is located thereon. In other words, it comprises two axially coincident rotative members in spiral connection, one of which members is adapted for movement in the plane of the axis thereof and independently of the other, and the other of which members are held against movement in the plane of its axis, this constituting a simple and effective means where it is desired to transmit the power direct from the driven shafts.

By providing a spiral connection between the driven shaft and the power transmitter, which may be either the worm wheel, shown in the illustration or the gear wheel as described above, the resistance exerted by the power transmitter against the worm will vary according to the work being done, and the first result of this resistance will be to force the driven shaft and the driven members secured thereto inward, toward the driving member, consequently the greater the resistance to the power transmitter the greater will be the frictional stress exerted between the driving and driven members upon the friction wheels, this stress being reduced proportionately as the resistance is reduced, thus automatically effecting the requisite regulation of frictional stress proportionate to the load.

The working parts of this gear are entirely enclosed within the cylindrical casing, and by removing the bolts with which the outer frames, containing the bearings, are attached to the casing, either of said frames may be readily removed, carrying with them the entire mechanism at that side and admitting of ready access to the friction disks and their supports.

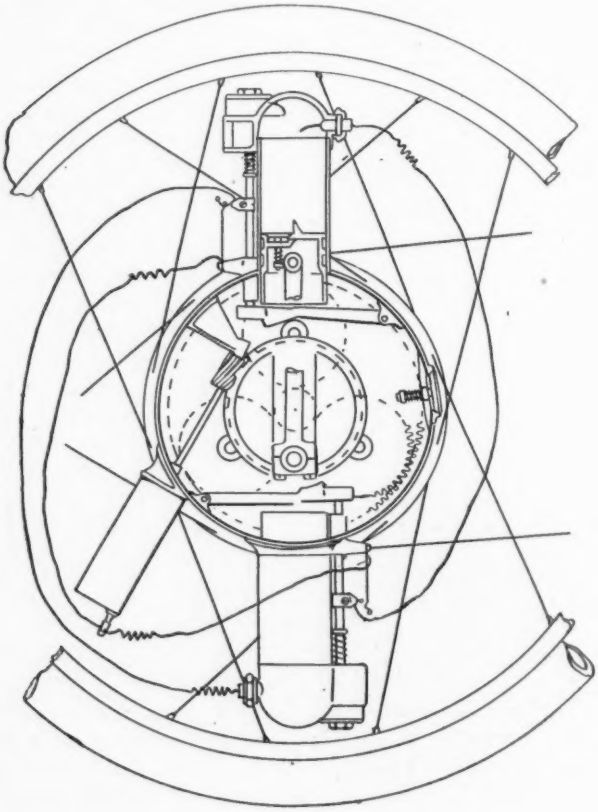


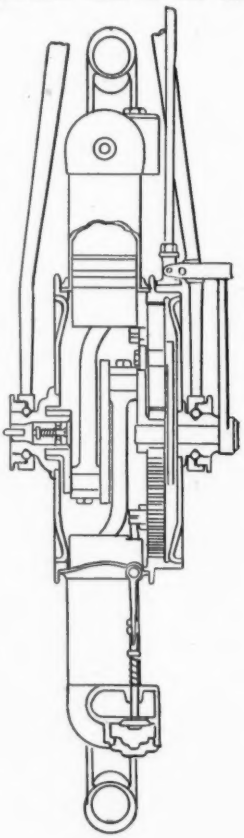
DURYEA'S MOTOR BICYCLE

Chas. E. Duryea, who has probably devoted more time and experimental work in endeavoring to solve the problem of the adaptation of gasoline motors to automobile construction than anyone else, has been recently granted a patent on a motor bicycle. The application was filed July 20, 1897, and it is quite possible that the delay in the issuance is due to an inclination on the part of Duryea to hold it until he considered the time ripe for its presentation to the public.

Duryea's design is, in many respects, a radical departure from those with which the public has become familiar. The motor is entirely contained within the front wheel and, as shown in the drawings accompanying the patent, is without the usual cooling-flanges. One feature that shows very plainly the comparatively early date of the invention is the arrangement for permitting the pedals to be held stationary while the wheel is running. Instead of providing the modern free-wheel coaster-brake, the inventor provides the crank-shaft with a ratchet for rotating the driving-sprocket, which, of course, enables the sprocket to revolve freely forward. Another evidence of antiquity is found in a paragraph explaining the necessity of the ratchet device because of the fact that "all explosion engines must be started in some manner before they will operate," a somewhat Hibernian style of expression.

The motor is described as having one or more cylinders, mounted upon the enlarged hub of the wheel, in which enlarged hub is the crank-shaft and operative gearing. This hub consists of a barrel, fitted with removable heads in such a manner as to be practically gas tight, and the heads are provided with central bearing hubs, one of which has an air passage through it, closed by an inwardly opening valve. On this end is also located a stud, on which one end of the crank-shaft is journaled. This crank is suitably formed to accommodate the number of cylinders used in the case





described, two in number. The bearing hub of the other head likewise has a passage through it, which serves as a bearing for an idler shaft. The inner end of this shaft carries a disk or triangle, on which are mounted three idle gears, and on an end of the shaft projecting beyond this disk is mounted an end of the crank-shaft with its attached driving-gear.

Attached to a flange of the gear case, or formed integral therewith, is an internal gear into which the idlers mesh. On the outer end of the shaft is placed a wheel, or lever. On the fork, or frame work, is located a clutch arranged to engage and hold the wheel, or lever, the purpose of which will be explained. On the same studs as the three idlers are placed rollers adapted to contact with levers arranged to operate the exhaust-valve. The inlet-valves are located in the pistons. On the piston heads are located sparker-points, and in the cylinder-heads are insulated sparker-points. To provide the energy for causing the spark a dynamo is arranged which is driven by a spiral gear attached to the crank-shaft.

In the driving apparatus described, six revolutions of the crank-shaft produce one revolution of the internal gear, and, consequently, of the wheel. When the lever above described is held in fixed position by the clamp, the axles of the three idlers must remain in fixed position so that power applied to the small gear on the crank-shaft, which meshes with the idlers, will drive the large internal gear in a direction the reverse of the crank-shaft motion.

The method of operation of the engine is as follows: Upon the pistons being forced outward from the center of the wheel the tendency is toward the formation of a partial vacuum in the gear-case, with the result that the inlet-valve in one end of the case is opened, drawing with it from the vapor-mixer a supply of vapor, and upon the pistons being moved in the opposite direction, or toward the center of the wheel, the inlet-valves in the pistons will open, admitting the vapor to the cylinders. Upon the next outward motion of the pistons this vapor is compressed and fired in the usual manner. It must, however, be understood that the timing of the valve operation, and the sparking is such that the explosions in the cylinders occur alternately, as is generally the case in opposed cylinder engines wherein the cranks are set at 180 degrees. In the specifications no arrangement is made for a muffler, though it is stated that such may be added if desired.

The action of the sparker is unique and worthy of description. As before stated, a dynamo is used, the operating mechanism thereof forming one of the connections, while the other pole is wired to the circuit-making points of one cylinder and then to the sparker on the other. These circuit-making points operate in connection with the stem of the exhaust-valve. At the start of the compression stroke in one cylinder the exhaust-valve of the other is opened, and in its outward movement closes the circuit for the cylinder next to be fired. It is the intention to fire the charge shortly before passing the center, and at this time the exhaust-valve of the opposite cylinder is closing, and by its downward movement the contact is broken, causing the spark to jump from the insulated sparker-point to the corresponding point on the piston and fire the charge.

One point which might well be considered by constructors of motor bicycles is that the controlling devices are designed to be operated without removing the hands from the handle-bars. The amount of gasoline admitted to the carbureter, is controlled by a device operated by the right hand grip, which is rotatable on the handle-bar, and is provided with an index to show the amount used. The clamp for operating the gears, as above described, is operated by a lever, similar to the usual type of brake-lever, attached to the left half of the handle-bar. The movement of this lever in the direction of the hand-grip releases the clamp controlling the idler-shaft, and a still further motion of the lever in the same direction applies a plunger-brake to the front wheel.

A point which Mr. Duryea has apparently overlooked in this connection, is what would happen to the rider of a machine in which a considerable amount of the weight is carried by the front wheel should he suddenly release the driving mechanism and apply to that wheel sufficient braking force

to bring the machine to a comparatively sudden stop. In the estimation of the writer, the average broncho would be paralyzed with envy.

Foolish Abuse of Tire Makers

Here is a choice selection from the report of an alleged expert of one of the papers who was selected to cover the endurance run: "All of the vehicles carried one spare tire, and most of them two, which forms a sufficiently ironical commentary upon the state of the art of rubber tire making, so called, the shortcomings of which are hindering greatly the automobile industry in its infancy." The man who wrote this should be in the advance ranks of candidates for a lunatic asylum.

The automobile would be an impossibility, in its present form, but for the pneumatic tires. Not one of the vehicles which went through the endurance test could have done so in anywhere near the same time, and few of them could have gone through at all on anything but pneumatics. It is not within the power of man to alter the material supplied him by nature. By combining two or more products he is enabled to make uses of them for which they were never intended, and, as in the case of tires, to accomplish something which, a few years ago, was regarded as impossible even in connection with light vehicles such as bicycles. The harebrained individual who finds fault with a tire which fails to resist every obstacle placed in its way has no knowledge of the subject of which he presumes to teach others. Few people, save those engaged in the manufacture of tires, realize the strains to which they are subjected. Ten years ago it was considered madness to place a pneumatic tire on a bicycle weighing thirty pounds. To-day they are placed on vehicles weighing that many hundreds of pounds, and driven at a speed which, when the machine is stopped suddenly, imposes a pressure of many times the weight of the vehicle. Let the critic figure for himself, if he is able, the force of a blow delivered by a weight of 2,000 pounds traveling at thirty miles an hour. That is exactly what these poor productions of incompetent makers have to endure. Traveling at great speed, the tire has to withstand the wear and tear of this monstrous weight, striving with all its momentum, backed by the power of the engine, to overcome every resistance. The tire is the one thing which comes between the machine and the obstruction. It lessens the impact by absorbing the obstruction. Every revolution of the wheels means a twisting and bending of the tire along its edges such as no man, save those engaged in the manufacture of tires, can appreciate. The fact of the matter is that, considering that the pneumatic tire for automobiles has been developed within the last three years, the makers have done marvelously. No other part of the machine can show as great progress. The reason is that the tire is the work of specialists, who have thought of nothing but the production of the one thing best calculated to offset the devilment wrought by the whole remainder of the structure. The machine is an engine of destruction, to itself and everything under it. It is the work of the tire to so relieve the destructive efforts of the machine as to prolong its life and usefulness. The man who berates the tire makers, who have done so much, should be properly described in one four-letter word, whose use would be more truthful than polite.

LATE EFFORTS OF DESIGNERS

Henry Splitdorf of New York, manufacturer of the spark-coil bearing his name, has recently designed a new dry battery, so constructed that the shell enclosing the battery is effectively protected against the action the electrolytic fluid, though the latter has access to the outer as well as the inner surface of the zinc element. In general construction this battery is similar to the usual type of dry cells except that in the usual construction the zinc element serves as the outer case of the battery, and only one side of it is subject to the action of the electrolytic fluid. In this battery the zinc element is surrounded at the sides and bottom by two concentric paper shells, between which is enclosed a packing of such nature that it will withstand the destructive action of the fluid. A mixture of paraffin and resin has been found to give satisfactory results.

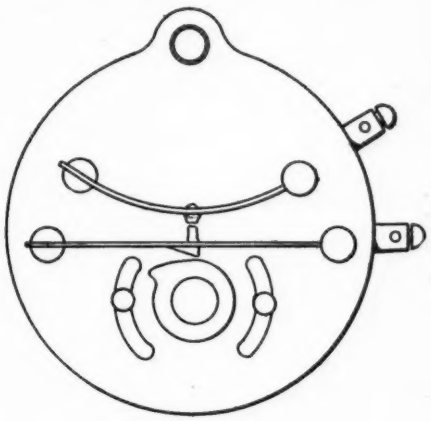
The zinc element is slitted lengthwise and is open at the bottom so that the fluid may attack the outer as well as the inner surface of the electrode, and correspondingly increase the life of the battery. The principal advantages claimed for this cell are increase in the life of the battery and that owing to the construction of the casing the battery may be used until the zinc element is practically destroyed while the casing will always remain dry and intact.

An Elastic Tire

The pneumatic tire is no doubt possessed of some objectionable features, but it should not be held to account for all the devices that have been brought forth to take its place. Hardly a week passes without the introduction of some substitute for the inflated tire. Many are utterly worthless, and comparatively few are worthy of passing consideration. One of the latest is that of E. A. Dibbens, of Denver, Col. It consists of a tubular casing, within which is a supporting member, V-shaped in section, and so placed that the apex is at the tread side of the tire, and the branching portions strike the casing at or near the edges of the rim. Located at regular intervals along the outer surface of this V-shaped cushion are outwardly extending lugs or wings, whose outer edges are curved to conform to the inner concave surface of the hood.

An English Contact Breaker

An English manufacturer of automobile supplies is putting on the market a contact breaker which possesses some features worthy of consideration. The simplest form, for single cylinder engines, is shown



in the illustration. It consists of two springs, mounted on a rocking disk of non-conducting material, provided with adjoining platinum contacts which are normally out of contact with one another. The end of the cam shaft projects through the disk and carries a cam which, in revolving, acts upon a projecting lug on the under side of the lower of the two springs, forcing it up and causing the upwardly projecting platinum pin it carries to make contact with the platinum stud on the upper curved spring, at the same time pressing up the spring, thereby producing a strong and at the same time rubbing contact. This is undoubtedly the best form of contact to give good results with induction coils and it is plain that the duration of the contact and suddenness of the break can be modified by duly altering the form of the cam and the time of ignition may be varied by rocking the disk. When arranged for engines with a number of cylinders, a num-

ber of different sets of springs are arranged around the cam so as to be successively actuated by it at the proper time.

Engine Which Needs Modifications

One of the favorite motor bicycles in England is the Singer, the principal characteristic of which is that the motor and all its appurtenances are entirely contained within the rear wheel. So successful has this machine proven that there have been a number of devices of a similar nature brought forth. However, in most cases no attempt is made to confine the gasoline tank and the various other impedimenta of the engine within the wheel, the engine only being therein located.

One of the latest devices of this kind is the invention of James D. McFarland, of San Francisco, Cal. In this the wheel is adapted to revolve about a fixed shaft, to which the piston rods are connected. The cylinders, of which there are preferably four, are connected with the wheel-rim by lugs projecting radially inward from the inner periphery of the rim, there being two corresponding lugs projecting from the outer ends of the cylinders. Through these lugs a pin passes and is suitably secured, forming the pivot about which the cylinders oscillate. The piston rods are hollow and pass through stuffing-boxes at the inner ends of the cylinders.

In order to make the four connections with the crank and maintain the piston-rods in the same plane of operation, the connection is made as follows: Two opposite piston-rods are fixed to sleeves, which are rotatable side by side on the central portion of the crank-pin, and have projecting lugs, to which the piston-rods are secured, each over-lapping the other ring, so that with this over-lap the piston-rods are brought in the same plane. The other pair of piston-rods, standing at right angles with the pair first mentioned, connect with stirrups, which span the two rings first mentioned, and the rods are so attached to these stirrups that they lie within the same plane with the others.

A point where Mr. McFarland's engine would fail if built in accordance with his drawings, is that the admission valve is located at some distance from the cylinder, connection therewith being by means of a pipe, the length of which must of necessity be greater than that of the cylinder, so that, on ignition, the vapor within this pipe would be exploded as well as that in the cylinder; and even should the pipe be made heavy enough to stand the strain of the explosion the passage between said pipe and the cylinder is too small to admit of the pipe being used as a combustion-chamber. Another feature that would have to be radically changed is that this same pipe is used both for the admission of fresh vapor and as a passage to carry away the burned gases of the exhaust. As these vapors would never be totally expelled therefrom on the exhaust stroke, it is extremely probable that the fresh vapor would be fired by the remaining exhaust vapors during the intake. With the necessary modifications of these particular features, this engine might be a valuable acquisition to the motor cycle industry.

A New Boiler Tube

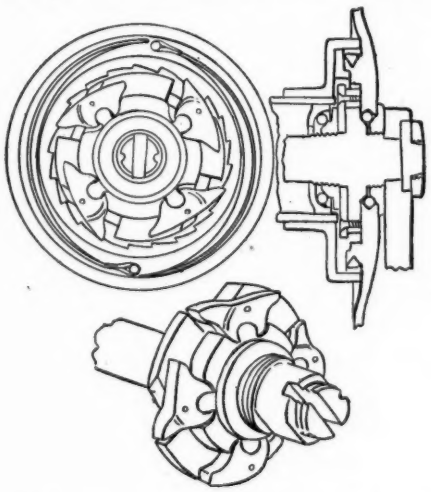
John W. Walsh, of Burlington, Ia., has designed a new boiler tube, the primary object being to provide a construction that will allow for expansion and contraction due to sudden changes in temperature. These tubes are corrugated, formed of sheets of metal of the proper size and thickness, and an important characteristic is that the parts of the metal plate to be corrugated are so thickened that the corrugated portion of the tube, when completed, will be of the same strength and thickness as the uncorrugated portion.

According to the description given by the inventor, it is designed to manufacture these tubes of sheet metal provided with parallel corrugations and formed into a tube or cylinder with the edges riveted, or otherwise joined. While the annular corrugations suggested by Mr. Walsh may be of value, it seems probable that some method of making these tubes from seamless tubing will have to be devised before they will be adaptable to boilers to motor vehicle use.

The Latest Coaster Brake

F. E. Denzer and John Hullt are the inventors of a new coaster-brake, and as these gentlemen reside at Hood River, Ore., it may be taken for granted that they are

thoroughly experienced in the requirements of an article of this character. They have, however, made one mistake inasmuch as the brake is applied at the crank-shaft, and, therefore, has to work against the leverage in favor of the reduced gear of the driving-wheel. They state that the brake may be readily applied to the wheel without materially changing its construction, but this is not easy, as the entire operation would necessarily have to be reversed. The crank-axle may be journaled in the hanger in the ordinary manner. The crank-shaft is of the type generally in use with three-piece hangers, and at the point to which the spider or other device for attaching the sprocket is attached is a pawl actuator, secured to the crank-axle so as to rotate therewith. A cone is formed at the outer end of the pawl actuator and a companion cone is adjustable upon the threaded portion of the crank-axle to vary the size of the ball-race formed between these two cones. In the central portion of the sprocket-wheel is a groove,



which, in conjunction with the ball-race just described and the proper balls to fit therein, forms the bearing whereby the sprocket-wheel is rotatably located on the shaft. The outer end of the loose cone on the shaft is flanged and overlaps the opening in the sprocket-wheel, and may be milled or knurled to facilitate the turning of the cone to adjust the bearing. Formed at intervals around the periphery of the pawl actuator are lugs designed to receive the pawls. These lugs do not project beyond the periphery of the actuator but are seated within notches cut into the periphery thereof, as shown in the illustration.

Loosely mounted on the crank-axle between the pawl actuator and the bearing-cone, is a pawl-carrier, the periphery of which is formed with notches to receive an end portion of the pawls. This carrier consists of a disk or ring, and the notches have their radial walls cut square, and the tangential walls beveled toward the pawl actuator to provide clearance for the contiguous offset ends of the respective pawls. The pawls are widened centrally and have notches on their inner edges of a shape and size to conform with the lugs on the actuator, which co-operate therewith. The pawls are double-ended, one end being in the plane of the actuator and adapted to engage with teeth located in an inwardly projected ring of the sprocket-wheel. The other ends of the pawls are offset so as to lie in the plane of the pawl-carrier and engage with teeth on the brake actuating ring. Thus each of the pawls is adapted to turn in its pivot so as to throw either end into action. By having the pawl actuator rotatable with the crank-axle and the carrier loosely mounted upon the axle, movement of the latter is transmitted to the pawl-carrier by means of the pawls and the actuator. The first or initial movement of the crank-axle effects the turning of the pawls upon their pivots, so as to throw one or the other of their ends into engagement with either the teeth of the sprocket-wheel or the teeth of the brake actuating ring, according to the direction of the application of power. A forward movement of the crank-axle throws the forward ends of the pawls into engagement with the ratchet teeth of the sprocket wheel, and causes rotation of the latter and consequently propulsion of the wheel. A reverse movement of the crank-axle causes the opposite ends of the pawls to engage with the teeth of the brake actuating ring, whereby the brake is applied.

The sprocket-wheel is provided upon its inner face with a ring or flange on the inner perimeter of which are the ratchet-teeth for driving it. On the periphery of this flange is a V-shaped groove, designed to co-operate with brake-straps of corresponding shape, which have one end secured to the brake actuating ring, and the other to a cup or casing, secured to the crank-hanger and enclosing the operating parts of the brake mech-

anism. An annular depression is formed in the inner face of the sprocket-wheel and receives the flange, or rim of the above described casing and forms a close joint therewith for the exclusion of dust and foreign matter. The brake actuating ring is located within this casing and encircles the pawl carrier; its inner edge is provided with teeth whereby the ring may be moved in the proper direction by the rearward ends of the pawl. The brake-straps may be of any material best adapted to the purpose, and are resilient so as to automatically release the ring, and consequently the braking pressure, the instant back pressure upon the pedals is removed.

Combined Spectacles and Goggles

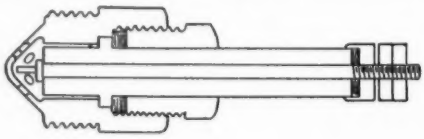
A far-seeing English optician has started to make goggles for short-sighted people from prescriptions furnished or from the glasses which customers wear. By this method, the wearer is relieved of all sorts of inconvenience and annoyance from the pressure of his spectacles on the eye or accidental removal, with the goggles. Some maker in this country might follow the lead with advantage to himself and the automobile world generally.

Dyke's Latest Offer

A. L. Dyke, of St. Louis, has added to his already large line his No. 0 outfit. The engine is a single cylinder 4x4, and is rated at 3½ horse-power. The cylinder, head and valve-chambers are cast in one piece and are water cooled. The fly-wheels are contained within the crank-casing, which is of aluminoid. The transmission gear gives two forward speeds and is light and well constructed. The running-gear included in this outfit is called by the manufacturer, the Flexible Reachless. It consists of an angle-iron frame, to which the body is rigidly attached. The springs are so arranged that the wheels may readily adapt themselves to any inequalities in the road. From the angle-iron frame radius rods run to the rear axle in order to provide proper tension for the chain. The rear axle is continuous and the differential gear is located near the right end. These gears are made in several sizes, and are fitted with either wood or wire wheels. Another new outfit presented by the same manufacturer is called the No. 2 Special. This is a large and powerful gasoline machine, equipped with a 7-horsepower, double cylinder engine. Mr. Dyke is now preparing a new illustrated catalogue which will be ready for distribution some time in October.

Spark Plug of New Design

Nearly every user of a gasoline engine is unpleasantly aware of the fact that a prolific source of trouble is the blackening of the electrodes of the spark plug. Frank R. McMullin, of Chicago, well-known in connection with the McMullen Motive Power Co., has devised a plug wherein particular attention has been given to the avoidance of this trouble. The general design may be seen in the illustration. The distinguishing feature is a conical chamber, within which the spark occurs. This



chamber is provided with perforations, through which the vapor may enter during compression and be ignited by the spark, the flame being carried out through these same perforations and thus communicated to the vapor in the combustion-chamber.

Another point for consideration is the ease with which the insulated electrode, its covering and accessories may be removed from the outer portion of the plug, allowing it to be easily and readily cleaned, and also providing easy access to the conical chamber for the same purpose. In operation the vapor is forced into the conical chamber during the compression stroke, and is fired, as above explained. Thus the electrodes are subjected only to the carbon deposit from the small quantity of vapor within the chamber, and the points are also protected from any liquid gasoline or oil which may enter the cylinder.

Graphite for Motor Cylinders

The Joseph Dixon Crucible Co. has received from a prominent artist who has used Graphitoleo, the following:

"The No. 635 I use in connection with oil in the engine and in this way: I have a small hose or tube, the same as is used

in atomizers, into one end of which I force a quill tooth-pick, and by pressing lightly into graphite, two or three times, fill the quill; then unscrewing the sparking plug of the engine, I push the quill end of the rubber tube through the explosion chamber down into the cylinder, having first put piston head to lowest point. With a light puff of air into the open end of tube I discharge the graphite into cylinder, which, being already oily, gets an even deposit all over the bearing surfaces. This I do each day before or after the day's riding, and the result is perfect condition of engine at all times. This may sound like it was a troublesome job, but it is not, and not more than two minutes is consumed in the operation. The Graphitoleo I use in packing the gear case immediately under the sparking arrangement on side of motor. With the cogs and eccentric working in a mass of this lubricant, wear is imperceptible and friction is too small a matter to consider. My engine works beautifully under this treatment."

The B. F. Sturtevant Co., of Boston, Mass., has upon the press a very complete catalogue of its motors, generators and generating sets. Previous publications have been in the form of bulletins descriptive of special types. This catalogue will present them all, and will, in some degree, reveal the fact that, although the Sturtevant company has a world-wide reputation as blower manufacturers, its business is by no means limited to the production of these useful machines, but that it is also equipped with a more complete line of engine and motor designs in small and medium sizes than any other concern in the country.

Jsoeph H. Washburn has been appointed manager of the Roller Bearing and Equipment Co., of Keene, N. H., by Vice President Rogers. Mr. Washburn was connected with the Ball Bearing company for several years, and was Mr. Rogers' most valued assistant during the management of the old company.

The making of seamless tubing for automobiles is a new industry which has been started in Pittsburg. The company is known as the American Tubular Wheel Co., and has been incorporated under the laws of New Jersey with a capital of $200,000. The incorporators are James H. Foster, Emmet McConville and Thomas Cochran, of Pittsburg; George W. Holt, of New York, and Charles Foster, of Wilmington, Del. A new automobile and carriage wheel is to be made of cold-drawn steel tubing. The wheel is composed entirely of steel, and may be used with pneumatic, hard rubber or steel tire. The new concern is allied with the United States Motor Co., of Pittsburg.

The J. L. Kinney Machine Co., 148 Market street, Milwaukee, is preparing to manufacture gasoline runabouts on a large scale. This concern has been experimenting for several years, has built a number of vehicles, and has almost entirely abolished noise and vibration. Ground has been purchased for the erection of a large plant which is intended to be ready for occupation late in the fall.

A coaster brake containing only nine pieces, having a barrel hub only 1¾ inches in diameter, and no fibre in its construction, is being marketed by the Barwest Coaster Brake Co., 99 Chambers street, New York, under the name of the Barwest. The brake is said to possess a number of attractive features.

The Post-Lester Co., of Hartford, Conn., is preparing to issue an automobile parts catalogue, which will be one of the most complete of its kind. It will contain everything from tires to covers, and will be a substantial book of from seventy-five to 100 pages. The company will introduce several specialties for the automobile.

Of the many firms manufacturing forgings for the automobile trade, there are few who have devoted more time and attention to this branch of business than has the Page-Storms Drop Forge Co., of Chicopee Falls, Mass. This company is making parts for some of the most prominent builders.

FROM CORRESPONDENTS

Akron, Ohio, Sept. 30.—To the Editor—We are somewhat surprised in reading in your issue of Sept. 26, under heading "Tires Stood the Test," that the St. Louis Motor Carriage Co. had its vehicle equipped with tires made by B. F. Goodrich Co. We presume this is a blunder of your reporters, for the facts in the case are they were fitted with the Goodyear Tire & Rubber Co.'s Puncture Proof tires, and furthermore they were inflated on leaving New York and were not again touched or inflated until their arrival at Buffalo and received no punctures or injuries whatever during the trip.—Yours, etc., The Goodyear Tire & Rubber Co.

Major Davidson's Object

Higtland Park, Ill., Sept. 19.—To the Editor: On account of the great number of misstatements that have appeared in regard to our automobile battery, I feel that it is no more than justice to the boys, if not to the general public, that a statement of facts be made.

We did not leave Chicago on Aug. 27 and have an accident with our carriages at Arlington Heights. Our carriages, at the time, had not been completed. We did not make two starts from Chicago and turn back for repairs. We did not leave the academy Sept. 3, at noon, arrive at Evanston at 1 o'clock and at the Chicago water tower at 2 o'clock. We did not start, nor say we would start, until Sept. 5.

We did leave Chicago the evening of the 5th, running out to Hammond the morning of the 6th. Six hours were spent there getting breakfast and adjusting the driving chains. Inability to secure gasoline at Highland detained us there until the morning of the 7th. With the exception of readjusting a bearing, no trouble was experienced until we arrived at Woodville, the afternoon of the 7th. Five days were then lost at La Porte waiting for a new cone for the engine shaft for carriage No. 2. We went into camp as soon as we heard of the death of our president. It seems in poor taste now to go to the national capital at a time when the whole nation is in mourning for its chief. In order to complete our experiment, however, the carriages will be run on to Buffalo, and possibly to New York—depending somewhat upon the weather—the run to Washington to be made early the coming summer.

It might be in order to add that it has not been our intention to break any records. If we intended doing this, we would not have taken two carriages, which simply doubles the time of delay, neither would we camp en route, doing our own cooking and leaving our carriages exposed to all kinds of weather 24 hours a day.

The carriages were built and are managed by amateurs. They were put on the road direct from the shop, without any preliminary trials. There is no skilled engineer or machinist with the corps. Our experiment so far has been entirely satisfactory, our only trouble, aside from adjustment necessary to any new machine, being to maintain the desired steam pressure, a fault which, we believe, we have now remedied.—Yours, etc., R. P. Davidson, Major I. N. G., Commandant of Cadets.

A Complaint From Texas

Paris, Tex., Sept. 23.—To the Editor: Some time ago we ordered a Stratton motor from the Stratton Motor Bicycle Co., New York, and in compliance with its terms sent $5.00 to guarantee transportation, with instructions to ship C. O. D. As this seemed about as liberal terms as anyone else in the

motor business offered, we did not object. After waiting about two months, we wrote and telegraphed to know when we might expect our motor, and a few days later we received a letter in which the company addressed us thus: "We ship this week on Friday your full set of parts," which, with an apology, constituted the letter. After waiting another thirty days, we wrote a countermand for the order, requesting that the company return us the $5.00 and stating that in the absence of the remittance in due course we would draw on them. After waiting some fifteen days for a reply, which did not come, true to our promise we drew for the $5.00. About ten days later the draft was returned to us, with slip attached bearing this inscription: "Presented by messenger and notice left. No attention given."

I am convinced that the Stratton Motor Bicycle Co. is being run on poor business principles, and hope you will deem it advisable to publish the above that others may beware.—Yours, etc., E. F. Baker.

Wants to Lease Vehicles

Sioux City, Ia., Sept. 30.—To the Editor: The Sioux City Trades Assembly is in conflict with the street railway of our city and have established a boycott against same. We are desirous of getting an automobile line established. We wish to know if it is possible to lease five automobiles of about sixteen persons seating capacity. We have plenty of money to back any such move we can make and it is only a question of where, if any place, such business is done. If we can have them we will send an agent to confer with any one you may refer this to.—Yours, etc., F. H. Lawrence, care of Dow Clothing Co.

An Adventure and Its Lessons

The daily newspapers recently reported an accident to S. W. Rushmore of New York, which might have been attended with fatal results. Following its usual custom MOTOR AGE asked Mr. Rushmore for details of the cause of the accident and has received from that gentleman a detailed account which accentuates the oft-repeated story that it is impossible to take too great care in the provision of parts suitable to withstand all sorts of rough usage. It would hardly be fair to the makers, perhaps, to make mention of the name of the machine to which the report applies, but with this omission the latter is appended in the belief that it will be of interest not only to makers, who may obtain some suggestions from it, but to prospective buyers, that they may be enabled to make note of the requirements of a reliable machine from Mr. Rushmore's standpoint. Mr. Rushmore says:

"The auto wreck was caused by the wickedly defective design and construction of the machine. It, as you know, has very large rear wheels and a very light rear axle, but 1⅛ inch diameter. The bevel gears on the differential are of cast iron and not one-tenth strong enough, being perhaps 2½ inches pitch diameter and very small teeth. These gears are put on with a loose key barely ¼-inch square and 1½ inches long and a single small set screw in the thin gear hub is all there is to hold the thing together. In my machine, after running about 700 miles, this little set screw stripped the cast iron hub and of course the axle simply slipped out. The machine has no emergency brakes, the brake acting only on the differential, and we suddenly found ourselves coasting down the mountain with no means of stopping. After running perhaps a thousand feet, by which time our speed was fully 35 miles an hour, we came to a soft bank where I turned the machine, hoping to slow down without upsetting. My wife and I braced ourselves and would have been saved from injury had the seat been properly bolted to the body. It was held only by a few small wood screws and the whole seat, top and all, flew off and carried us in it through a number of somersaults up the bank and down the ditch. The bank was so steep that the machine cut a hole square into it fully 4 feet deep, then bounced out and continued flying backwards down the hill and brought up some 250 feet from where we first hit. It missed running over my wife, as she lay stunned on the road, by an inch. This occurred in pitch darkness and rain, and only the Searchlight saved our lives, as the speed was so great that an ordinary light would not have shown the danger ahead.

"A short time before this accident the

steering gear gave out while running slowly down a steep hill near Sing Sing and we were plunged into a ditch but a few feet beyond a deep gully. This was found to be due to the link from steering shaft resting directly upon the center reach frame of the machine so that on rough roads the rod was bent back and forth at every lump in the road until it parted. The link had begun to bend the moment it left the factory and it was made of the cheapest bar iron. Nearly all parts of the machine are of cheap bar or cast iron and I never could run more than 50 miles without some important part breaking.

"I know of a number of others that have failed just as mine did, even those that were but recently delivered, and I cannot see why the mortality is not very high. Our escapes were pure luck.

"I have called the attention of the Horseless Age to the fact that in certain respects the machines were exceedingly dangerous and suggesting that they publish a warning to users of such machines to rebuild the steering gears and differential and provide some form of emergency brake in case of failure of the differential, but they have treated me with contempt and continue to publish advertisements and editorials calculated to assure the public that the machine is reasonably safe. I have since purchased a Packard machine, which I have run about 800 miles, including the Buffalo run, and, although it has had some bad shocks, running into holes and ditches, nothing about it has failed.

"I have no desire to injure the makers, but I think attention should be called to certain defects which, under very ordinary circumstances, may cause the maiming and death of users.

"In the Horseless Age you will find elaborate details of the failures of the DeDion and many other makes, but not one word about the remarkable doings of the machine referred to. Why don't they tell about that machine as well? I saw some things on the run that the above named paper must know all about, but which it has not published."

Questions About the Remington

Stanford University, Cal., Sept. 23.—To the Editor: I should be pleased to have you answer a few questions. Please tell me your opinion of the Remington automobile. Is the company the same as the one which makes guns, typewriters, etc., or in any way connected with it. How does the machine compare with other good makes?—Yours, etc., Fred H. Smith.

(The company is not the same. The president of the Remington Automobile & Motor Co. is a son of the inventor of the Remington typewriter and the first models of the automobile were made at the same factory. The present location of the company is Utica, N. Y. The company has been in operation a short time only and therefore has placed few machines on the market so far. Hearsay evidence only is available, and comparisons, under the circumstances, are impossible. The reputation of the people connected with the company, as manufacturers and commercial men, is of the highest character.—Ed.)

Notes of Interest

19.—G. W. J. remarks that an accumulator which shows the required voltage when tested, will sometimes drop suddenly when started. There is no absolutely reliable method of ascertaining how much current remains in the accumulator. When the cells are fully charged it is wise to note the length of time it takes to run them down and be guided thereby on future occasions. It is always wise to recharge if the voltage falls nearly to two volts.

21.—To refill the accumulator use a dilute solution of sulphuric acid. One part of the acid should be added to 10 or 12 parts of pure water and when cool the mixture should be poured into the cells until the acid is about a quarter of an inch above the top of the plates.

20.—R. G. Shaffer, Phoenixville, Pa., agrees with other correspondents that in many cases gasoline vehicles are underpowered. No automobile, he says, should have less than 9-horsepower and then there would be few complaints.

Answers to Correspondents

Fred Bancroft, Chicago.—Its reputation will not atone for its failure to operate. If the smaller vehicle is in better condition, do not hesitate.

CYCLE SPORT AND TRADE

New York, Sept. 29.—The week's carnival of cycle racing, which ended at Madison Square Garden last night in brilliant fashion with an enormous attendance and some of the most notable contests of the indoor campaign, wound up track racing for the season in New York. Some of the evenings, such as last night, produced high class sport and others but mediocre programmes, which the public promptly reprimanded by slim houses. These off nights hurt the attendance at some good series of races and really were partially responsible for calling off the big night scheduled for Friday, though the management had been unable to secure Elkes, Walthour and Michael for a three cornered race as it had hoped.

The success of the indoor experiment was mixed, but there was enough encouragement that the Garden races would again be run next summer. Many hot nights coming on the regular Mondays proved a losing hoodoo even after the track had been altered into available motor paced racing shape. Some of the special motor-paced events and invariably the circuit meets drew big crowds; but these successes were sandwiched in between off amateur programmes and injudiciously poorly matched paced contests. When September came, though, and with it the cool nights the management's good cards were rewarded with good houses and altogether probably indoor racing at the Garden showed a small margin of profit.

MICHAEL'S SUPERIORITY.

In two contests the previous week Michael had shown himself so surely superior to Walthour that his third victory on Monday night was a matter of course and the match failed to prove a notable event. The race was in heats. The first was at 3 miles and Michael won by nearly a half a lap in 5.10 3-5. In the second heat at 5 miles Walthour made a much better race of it. They were even up at a mile, and at 3 miles the Southerner had gained some 20 yards. Michael then cut loose and Walthour weakened and lost his pace, Michael winning by over a lap in 8.12 4-5. The 5 mile amateur open fell to Schofield in 11.52, and R. A. Brooks won the mile handicap from 60 yards in 2:18 3-5, the field bunching early in the contest.

The professionals were on hand on Tuesday night with a 15-mile lap race as the star attraction. In the sixth mile Lester Wilson succeeded in gaining a lap. He had, of course, only to hold the bunch from this point on to win. Hard luck, however, pursued him; for in the mad rush of the last mile he fell and the race went to Kramer in 36:59 4-5, with Freeman second, Bowler third and Mayo fourth. The long markers set a terrific clip in the mile handicap and the back men failed to get through at the finish. Hausman won from 80 yards in 1:54, with Alexander (120) second, Bardgett (100) third, and Floyd Krebs (120) fourth. Hurley, Schrieber and Sullivan, the New York team, beat teams from New Jersey, Brooklyn and the Century Road Club association in an unlimited team pursuit race, the Jerseymen finishing second and the road club third. Schreiber had his usual success in the amateur event, winning the mile handicap in 2:11 2-5.

POOR PROGRAM AND ATTENDANCE.

A very skimpy program on Wednesday night drew a commensurate attendance. Michael jollied McFarland in a heat single motor paced match race and then won under a strong pull, as the horsemen put it, in 5:51 2-5 for 3 miles and 8:56 for 5 miles. Marcus Hurley, the amateur champion, was a trifle too speedy for Schreiber, the Garden favorite, in the invitation mile open. Schreiber failed to score in the mile handicap, the race going to Hall (80) in 2:06.

TAYOR DEFEATS HURLEY.

Major Taylor's meeting Frank Kramer at mile heats improved the attendance on Thursday night considerably. Taylor let Kramer take the lead the first heat and made his jump in the backstretch of the last lap. Turning his head for an instant Kramer swung up a little and in the col-

lision was thrown, Taylor going on and wining the heat. The referee ruled that Kramer's collision was an accident, but no fault of Taylor's and gave the major the heat. Kramer again made the pace in the second heat, and Taylor perpetrated the unexpecfed by jumping in the sixth lap. He won the heat and the match amid great enthusiasm. The mile open professional with Kramer and Taylor barred, was won by Collett, with Fisher second, Freeman third and McFarland fourth. The long markers had it all their own way in the mile professional handicap, though the back men were just behind the winning phalanx led by Hadfield (120) in 2:00 2-5, with Newkirk (120) second, Alexander (100) third and Cadwell (100) fourth.

George Schofield (60) won the mile amateur handicap in 2:02 3-5, and the 10 mile amateur lap race fell to Schreiber in 24:27 3-5, with Sullivan second, Losee third and Fulton fourth, Schreiber jumping the bunch and gaining a lap.

A TWENTY-FIVE MILE RACE.

Six thousand people gathered in the garden last night to see the splendid farewell program of the season run off, and altogether no better series of contests has been witnessed in this district this year. The star event was a 25 mile professional lap race with prizes at every mile. George Schreiber, the garden's most popular rider, made his professional debut in it, and caused wild cheering by leading at 5 and 15 miles. Major Taylor started and looked all over a winner. He rode well back in the bunch all the way and set no pace save once, when he pulled down the runaway McFarland and saved the wily Californian from stealing the race by lapping the bunch. Taylor did not attempt to move up until the last mile and then only into fifth or sixth position. It looked as though he had lost count of the laps, for he made no attempt to take the lead until the bell. He then came around the field very fast, but Kramer won from McFarland by a half length with the major only a foot behind the Californian. Otto Maya was fourth. The time—57:52 4-5, is a new world's record, supplanting Kramer's own figures, 58:55 2-5, made at Vailesburg last Sunday. Schreiber scored a world's record for 15 miles in 34:17 2-5 and Hausman at 20 miles in 46:06 1-5.

Floyd Krebs won the mile handicap from the 120 yards limit in 1:56, with Major Taylor second in 1:58 4-5, with Bardgett (80) third and Bowler (35) fourth. Marcus Hurley, the amateur champion, and George Schreiber, the indoor favorite, had an inches apart match race in quarter, half and mile heats. Schreiber won the quarter in 31 1-5 and Hurley the half and mile. Michael made new indoor records behind single pace: 3 miles, 4:36 3-5; 4 miles, 6:09 2-5; 5 miles, 7:39. The 5 mile amateur lap race was won by Schreiber in 11:37 1-5, with Sullivan second, Dobbins third and Schofield fourth.

The Great Prize of Paris

The fattest race of them all—$1,600 to the winner—commenced on the Municipal track, Paris, on September 15. The first Great Prize of Paris was run in 1894 and Banker, of America, won. In 1895 Morin was the winner, with Bourillon second and Banker third. The year after Morin won again from Jacquelin and Eden, while among those who also took part were the Americans Johnson, Kiser and Wheeler. In 1897 Bourillon won, but having fouled on the last turn he was disqualified and the race given to Morin. In 1898 Bourillon was the winner, while Meyers and Broka were after him. In the following year an Italian won the event for the first time. He was Tommaselli. Last year the race was run on the new Municipal track of some 500 meters and won by the favorite Jacquelin.

This year forty-two riders, representing eight nations, sent in their entries.

Twelve heats were necessary, and the first two in each took part in a second series of eight heats, the winner of each of which was qualified for the semi-finals on the following Sunday. The winners were Cornet, Brecy and Jacquelin (French); Gascoyne, Jenkins and Green (English); Arend and Kaeser (German); Ellegaard (Dane); Momo, Ferrari and Eros (Italians).

The second day's attendance was better than last year. The final in the consolation race was something that will be remembered a long time by the 4,000 spectators. The nine heats of the consolation race were won by Arend, Conelli being beaten by half a length, and Green, the Englishman, was a good third. Momo won the next easily, while Vanden Born was also an easy win-

ner. In the final Momo took the lead, but was passed by the German before the first turn. Vanden Born was third. A little before the bell the Belgian came up alongside Arend and tried to pass, but the German begun his effort, while Momo, who had the pole, also responded, and the three were going at a lively gait 600 meters before the finish. In the last lap the Italian took about a length lead, while Arend was also passed by Vanden Born, who went after the Italian and caught him. In the last turn Arend had rejoined the others, while Vanden Born by a clever move took the pole. It then became a savage race. Momo unintentionally wabbled and obliged Arend to ride close to the outer fence, also causing him to fall. This enabled Vanden Born to gain a length. Any man with less pluck than Arend would have stopped, but the German did not lose his head, and in an effort which caused the spectators to break out in applause went after his competitors and caught them at 15 meters from the finish. He won by half a length. He said after the race that it was one of the hardest in which he had ever engaged.

Mile on Motor Bicycle in 1m. 15s.

Newark, N. J., Sept. 29.—An announced mile ride against time by Albert Champion on a single motor bicycle proved the sensation of the racing at Vailsburg this afternoon. After a few short trial spins the French motocyclist cut loose, and after a dare-devil ride around curves banked far too low for high motor speed, covered a mile in 1:15, which beats by 7 1-5 seconds the world's record of Butler at Buffalo last August. Michael won from McFarland in two straight heats in 7:42 3-5 and 7:59 4-5 in a 5-mile motor tandem paced match. The men made it interestingly close each heat up to the times toward the end of each heat, when McFarland was forced to quit on account of a flat tire. In the second heat McFarland's tandem went wrong and he followed Champion's single when they started again. Fenn made a clever win in the 2-mile professional handicap from scratch in 4:13 2-5, with Kimble (90) second, Freeman (60) third and Floyd Krebs (180) fourth. In the 5-mile open, whose pace was maintained by lap prizes, Fisher, apparently aided by Freeman, reached the head of the line and won by a half a yard from Kramer, who started his sprint late from the middle of the bunch. Bowler was third and Caldwell fourth. The time was 11:03. The mile handicap fell to Bullington, the scratch man, in 2:08 1-5, with Merkert (20) second and Glasson (40) third.

Further Friction Feared

Instead of transferring the Monarch sales department to Hartford, as had been reported to be the intention of the A. B. C., the Hartford sales department has been closed and transferred to New York. Seventy-five persons mourn the loss of employment in consequence. The causes of the change have not been made public, but it is reported in the east that it is due to "friction between the eastern and western men in the combine," a report which may be true and may indicate a renewal of the friction with which readers of this paper are familiar, but which, it was supposed, had been overcome. Colonel Pope is reported to have said, in an interview, that "if the change was to be made it was of course a part of the plan of the company for the improvement of its business, a very diplomatic remark.

The incident, and the removal of the automobile business to Toledo may, if one puts this and that together, cause some inquiries whether, after all, there is not some truth in the story that a change of officers is contemplated at the annual meeting which occurs in a few days. The story had it that Colonel Pope would be elected president.

Twenty-four-Hour Paced Race

The first 24-hour paced contest of the year was run at Berlin on September 16 and 17. Nine started. They were: Huret, Lesna, Miller, Robl, Joseph Fisher, Ryser, Kerff, Jean Fisher and Hartwig. Before the first half of the race was over a rain storm disturbed the hopes of everybody. Ryser was the leader during the first hour. In the early part of the second Robl began to ride as if going after the record and gained first place. Robl kept going ahead at splendid speed and from the third hour on broke all world's records up to and including the ninth hour. The new 6-hour record is now about 187 miles 1,503 yards. During the tenth hour the rain storm began and the riders had to go without pace for half an hour, as the track was dangerous. It rained all night.

About 11 in the morning another storm forced everybody to leave the track. The old timer, Joseph Fisher, from Munich, took second place during the fifth hour and kept it until the end. Charley miller was at all times among the first four up to the eleventh hour, but had to get a rest for over an hour, owing to stomach cramps. His pacing service was poor. Huret made a poor exhibit and may have to explain. He had but one tandem and never made any great effort. During the tenth hour he gave up. He had received a large sum from the management as appearance money and it seems that he did not intend to please any one except himself. At the end of the twenty-fourth hour Robl had covered 904 kilometers 145 meters, or very nearly 562 miles. Fisher was second at about 15 miles, followed at about the same distance by Kerff, with Miller fourth. Nine thousand people saw the end of the race and it is estimated that twice that many would have been on hand had it not been for the unfavorable weather. The management lost, according to a German paper, some $1,500. The total amount of prize money won by the riders is $3,578. Robl received a total of $1,702, Fisher $894, Kerff $567 and Miller $345.

One Million Bicycles in France

The returns of the bicycle tax in France ($1.) for 1900 show that there were last year 987,000 cycles. In 1894 only 203,000 cycles paid the tax. The number of cycles in France increased every year by about 70,000, and in 1898 there were 483,000 taxed cycles. The number went up with a bound to 839,000 in the year following, owing partly to stricter enforcement of the law. There must be now over 1,000,000 cycles in France. In fact, the country is getting near the saturation point. One-fourth of the million of cycles belongs to Paris.

Johnson's Employes Are Loyal

The Iver Johnson factory has been the scene of a strike among the polishers, who, not satisfied with staying out, tried to force others to do the same. The result was a general meeting of the employes of the factory, last week, at which the following resolution was adopted by an unanimous vote:

Whereas, Certain men formerly employed by the Iver Johnson's Arms & Cycle Works, for the purpose of inducing the present employes to violate their agreement, have resorted to means and methods which, to us, seem to be unwarranted and wholly without reason; therefore, be it

Resolved, That the present employes of the Iver Johnson's Arms & Cycle Works, in meeting assembled, do herewith disclaim all sympathy with these former employes or their methods, and we tender to said company our cordial and hearty support in the present emergency.

Resolved, That we agree to give to the Iver Johnson's Arms & Cycle Works our best endeavors for the proper and successful conduct of their business.

Resolved, That a copy of the foregoing be published in the daily papers.

Michael Off to Paris

New York, Sept. 30.—Michael, Eck and McFarland sail tomorrow on the Crown Prince William. The Welsh pacefollower will ride the first of his three races at the Parc des Princes track, Paris, on Oct. 13, probably with Bonhours. All three contests will be from 50 kilometers to an hour. McFarland sails primarily to engage foreign talent for the coming 6-day race, but he may have a 20-kilometer paced race with Jacquelin. Michael's pacing tandem went ahead by last week's steamer.

Close a Shelby Plant

The Shelby Tube Co. has closed the plant at Albany, Ind. This is the place started by the Western Wheel Works, Gormully & Jeffery and the Indiana Bicycle Co., during the hey-dey of the cycle trade. In course of time it was sold to the Shelby company, since which its operation has been spasmodic. The shut-down seems to be regarded by the townspeople as permanent, though no announcement to that effect has been made.

A race extending over six days was run at Springfield, Mass., last week. Two thousand people saw the finish. Woody Headspeth, a colored rider from Indianapolis, was first by half a wheel from Jimmy Hunter of Newark, N. J. Hunter threw away the race at the jump on the last lap by looking around, causing his wheel to swerve, and Headspeth went through the

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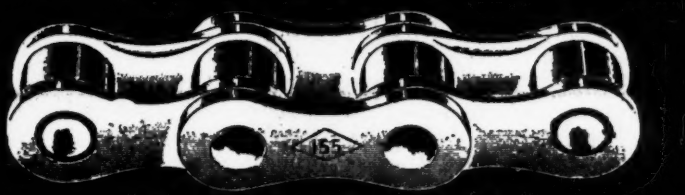

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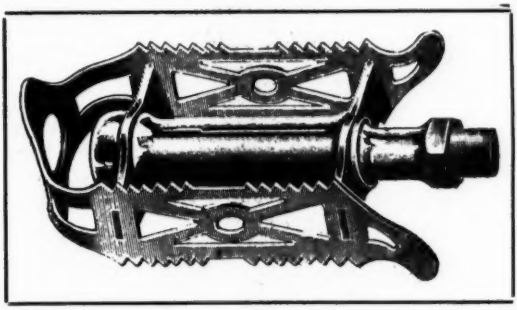

Known—And Well Renown—
Used of Old—By All Extolled

JOHN R. KEIM, - Buffalo, N. Y.

hole and finished first. The time of the last eighth was 0:12 4-5, just two-fifths second behind the world's record. The riders all covered exactly the same number of miles during the race, efforts of Hunter to pull away from the bunch being in vain.

Replying to an inquiry as to its intentions as to the automobile business the Miami Cycle & Mfg. Co. writes: "We are not in the automobile business. We have built up several motor bicycles on our regular Racycle frames using the Thomas motor, and this is as far as we have gone." A local paper reported that the company is to make steam vehicles, that it expects to have several on the streets within a few weeks and that Edward Nelson, of New York, has arrived in town and will have charge of the new department.

It is reported that Hedstrom, the man who designed the Indian motor bicycle which unfortunately came to grief very early in the late endurance run, and an old cycle racing companion named Henshaw, will make an attempt to race an express train, using a motor tandem for the purpose. If the race can be arranged the riders hope to have a board track laid alongside the Chatham & Lebanon Valley Railroad, somewhere in New York state.

The Eagle Bicycle Mfg. Co. announces that inasmuch as its output for the last year has been equal to any in the history of the company, it sees no reason to change its well established policy of making a complete line of chain driven cycles, as it is on that type that a great majority of the business is done. The company is not interested in motor bicycles.

The Sanger Handle Bar Co., of Milwaukee, has moved into new quarters at the corner of South Water and Lake streets, and is prepared to resume the manufacture of handle bars. Some improvements in 1902 models will be fully explained in a catalogue which will be issued about the middle of November. The factory has about 20,000 feet of floor space, and insures every facility for turning out large quantities of goods.

G. A. A. Bennett, of the Universal Trading Co., Dale End, Birmingham, England, was among the visitors at the office of this paper last week. He was in this country on a purchasing trip and sailed for home last Saturday. Mr. Bennett desires it to be known that he is on the lookout for anything desirable in the cycle and automobile line and especially has a desire to represent some good motor bicycle.

"I enclose check for some more CYCLE AGE literature. To be in the cycle trade without a copy of the AGE coming regularly would never do under the sun. Something would be missing which no other magazine would replace. Have always been a CYCLE AGE enthusiast and shall continue to be so as long as I am in the cycle business."—A. A. Hansen, Minneapolis.

The Milwaukee Cycle Co. reports a satisfactory season. Mr. Drake states that he had been able to maintain good prices and the August and September sales had exceeded any during the last three years, during those months. A specially light roadster will be a feature for 1902 product, the complete weight of which is not to exceed 20 pounds.

At Freeport last week a race took place between F. J. Jastram on a motor bicycle, and Miller and Willie and Judd and Kreamer on motor tandems. The last named team gave the others a start of two miles. Jastram won the race but the time honors went to Judd and Kraemer who averaged 1:40 and did one mile in 1:38.

The city of Worcester, Mass., has been unable to collect taxes amounting to $12,000 on the plant of the defunct Worcester Mfg. Co., and advertises that the property will be sold at auction on Oct. 4. Practically all the banks in Worcester hold mortgages on the plant.

The Stearns Bicycle Agency, of Syracuse, says that it has given the motor bicycle some attention but it has not assumed such shape as to be regarded as a commercial article for 1902.

At the Crystal Palace track on September 24, Arthur Chase, the bicyclist, rode 50 miles in 1:17:44, twice changing his bicycle. This beat the British record for the distance.

Dean & Hannum, cycle dealers at Spring Valley, Ill., have dissolved partnership. Mr. Hannum will continue the cycle branch.

A new cycle store has been opened by F. A. McMaster & Co., at Nashua, N. H.

THE RESULTS OF THE

Endurance Test

Furnished an eminently satisfactory proof of the excellence of the White Steam Carriages. **Of four**

White Steam Carriages

which started four finished—an average of 100 per cent.

They were in perfect order—could have turned around and gone back.

The White went through without a halt with less repairs than any other machine in the run.

And this proves beyond contention the perfection of steam as a motive power for vehicles—proves that our application of steam is beyond criticism.

Send for Catalog

To **WHITE SEWING MACHINE CO.** **Automobile Department**

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22 Union Square

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212 Woodward Ave.

SAN FRANCISCO
300 Post St.

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264 Euclid Ave.

White Carriages are on exhibition and for sale at local branch offices :: ::

ENGLISH SHOWMEN USE COERCION

There are prospects of lively times among the makers of cycles and automobiles in England. A heated discussion takes place every year over the show question. Some 3 or 4 years ago the promoters of the annual cycle shows, of which two are held in London, solicited the patronage of automobile makers. Many of the cycle-making houses are in the other business as well. The result was that they made exhibits at the cycle shows. Meanwhile the automobile club had started an annual automobile show at Agricultural Hall, and of course found the cycle shows a formidable rival. And so, this year, the club issued an announcement to the effect that no maker who placed his automobiles on exhibition at the cycle shows would be allowed to show at the automobile show.

AN ENERGETIC PRESIDENT.

About this time the Cycle Makers' Trade Protective Association held its annual meeting and, for the first time in its history, elected a president who will make the influence of the association felt. Heretofore, it has been conducted by a few old fogies whose voices were never heard outside of Coventry. The new president is Frank Bowden, managing director of the Raleigh company, a man who came to this country a number of times, believes in American push and is regarded as one of the most aggressive men in the English cycle trade. He tackled the automobile difficulty without delay. There is no association of automobile makers in England, and so he proposes to change the name of the old organization to fit the case and take in makers of automobiles and accessories. This having been accomplished, he proposes that the association shall hold the annual shows and shall pay an annual fee to the automobile club for its support.

AUTOMOBILE TRADE OBJECTS.

One of the English papers has consulted a number of trade people as to their sentiments in the matter. The result shows that a majority of the cycle makers look upon it with favor, but that among the makers of automobiles a majority are on the other side. It appears probable that the proposal will be voted down by the makers and the automobile club.

To add to the interest in the discussion, one of the cycle papers seems to have secured some inside information concerning the conduct of the automobile shows and the methods by which they have been financed. The financial backers of all the shows at Agricultural Hall have been Messrs. Cordingley & Co., publishers of automobile and other literature and who have had a great deal of experience in such matters. Concerning their connection with the shows, one of the cycle writers says he knows something of the true inwardness of the "Cordingly venture," which appears to explain the boycott of the other shows.

DID CLUB SELL ITS GOOD WILL.

"It will be recollected," he says, "that about three years ago a motor show was held at Richmond under the auspices of the automobile club. I should like to know (if the seceretary of the automobile club cares to vouchsafe the information) if it is a fact that, as I am informed, a heavy loss was sustained on that venture? Is it true that the automobile club was not in a position, financially, to face the loss? Is it true that Mr. Cordingley lent the club £500 to meet the loss? Is it true that this money was advanced on condition that the automobile club refrained from competition with Mr. Cordingley's private speculation at the Agricultural Hall for a defined number of years?

"Is it true that in consideration of the club lending its name and influence on behalf of Mr. Cordingley's show, Mr. Cordingley agreed to pay the sum of £200 per annum to the automobile club, and that this, or some similar mutual arrangement, is to extend over a number of years? If, as I have been told ,the answers to these questions must be substantially in the affirmative the boycott of the automobile club assumes a more interested aspect than appeared on the surface.

"I will take the liberty of putting one or

Stearns

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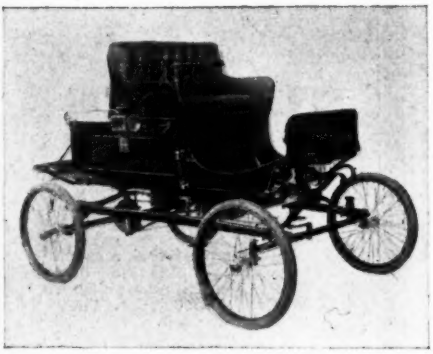
New York to Rochester, 394.3 miles in 32 hours and 21 minutes.

2nd. prize class B. hill-climbing. Nelson Hill, 4 minutes and 2 seconds. Any one of our vehicles will do the same performance if not better.

Model A. Runabout -	**$ 800**
Model B. Dos a Dos -	**1000**
Model C. Delivery Wagon	**1200**
Model D. Buggy Top -	**875**
Model E. Victoria Top -	**900**
Model F. Surrey - -	**1400**

Immediate Delivery. Agents Wanted. Regular Equipment, Low Water Alarm, Feed Water Regulator. Fire Controlled from the Seat, Air Pump on Engine, Engine Encased, Runs in Oil, Gasoline Generator, Pilot Light, Double Action Brake.



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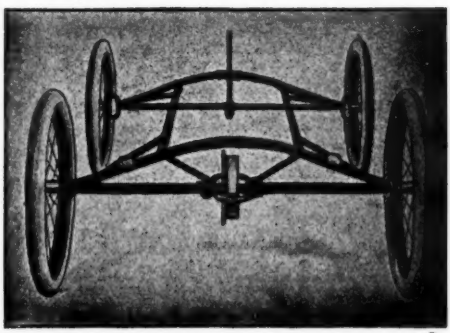
We are making standard ½-inch pipe size plugs for some of the largest manufacturers. Why not you? Write for circular. Price **$2.00 each, $15.00 per dozen.** We are also equipping the best American gasoline vehicles with Dow coils, batteries, etc., also motor cycle manufacturers large and small. Quality counts and our prices range accordingly. No cheap goods of any kind. Now ready for delivery: air-cooled motor castings, 1¼ and 3 horsepower sizes at $12.00 and $25.00. Porcelain insulators 20 cents. Write for circulars on auto supplies of all kinds.

THE P. J. DASEY COMPANY,

160-162 E. Washington St., CHICAGO, U. S. A.

GEARS



We are prepared to furnish gears complete on short notice; also frame fittings rough or machined, and solicit quantity orders. Material and workmanship of the highest order.

THE CONRAD MOTOR CARRIAGE CO.
Dewitt & Bradley Sts., BUFFALO, N. Y.

two more questions pertinent to this subject. Is it a fact that Sir Edward Jenkinson, the distinguished chairman of the Daimler Motor Co., presided at the meeting at which the boycott was recommended? Is it a fact that the Daimler company exhibited at the last National Show and admitted having done a large volume of business there? Is it true that the Daimler company early this spring applied for, and agreed to take a large space at the forthcoming National Show? Is it true that since the recommendation of the 'boycott' the contract for this space has been canceled?

"Is it true that Mr. Cordingley has agreed to defend any action taken against motor makers for this and similar infractions of agreements with other show promoters?

"Having done satisfactory business at the last National Show, how does Sir Edward Jenkinson reconcile his support of the boycott with the interests of Daimler shareholders? Is the Diamler company in such a healthy condition, financially and otherwise, that it can afford at the dictation of the automobile club, to stay away from what has already proved a fruitful source of business?"

Whitney's Single Roller Chain

The Whitney Manufacturing Co., of Hartford, Conn., is now ready to make deliveries on its new single roller automobile chains. These chains are made in a number of sizes and have been adopted by many prominent automobile builders. The Whitney chain, in its various styles, has been in use for many years, and the new type promises to become a standard article. The shape of the side links insures a perfect fit over the sprocket and prevents binding and breaking when under severe strains.

A petition in bankruptcy has been filed by James C. Bell, cycle dealer, of 8 Warren avenue, Boston, who states that his liabilities are $3,800 and his assets $500.

The Hennepin Cycle House, 325 South 5th avenue, Minneapolis, is in the market for a standard make of bicycle and would like to hear from makers at once.

The capital of the Milwaukee Automobile Co. has been increased from $25,000 to $35,000.

THE

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OF

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MR. BICYCLE DEALER:

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If you haye a visitor at your home you probably take care that he is comfortably seated. Do the same in your business. If you have a customer, urge him to take the best. The **Cushion Frame is** the best. If he doubts it, give him a demonstration. You can afford to stand or fall by his own verdict after a trial of an hour—perhaps a great deal less. He will easily get the value of the few dollars extra in the first month. You will make a larger profit on the sale.

If you have handled **Cushion Frames** you know that no man needs urging who has tried one. If you have not, why would it not be a good idea to consult some dealer or some manufacturer who knows all about them and ask for an opinion?

The Cushion Frame means increased comfort and a longer journey in a day. It absorbs vibration without decreasing power. It means comfort the day after a long ride as well as on the trip.

It is the twin brother of the pneumatic tire, What one fails to absorb is taken up by the other. It makes cycling healthful, exhiliarating, pleasant, safe.

And, after all, the price isn't so very much higher.

We shall be glad to give you all information about cushion frame models for men and women, chain and chainless.

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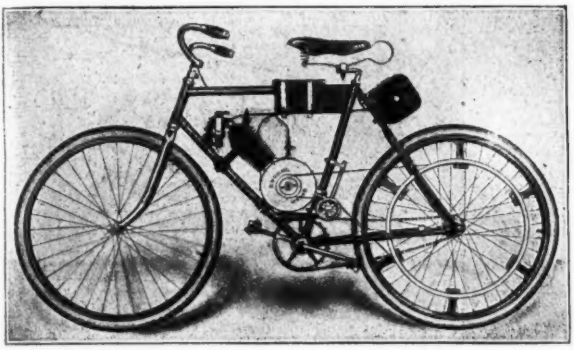

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Speed variation 4 to 25 miles per hour.

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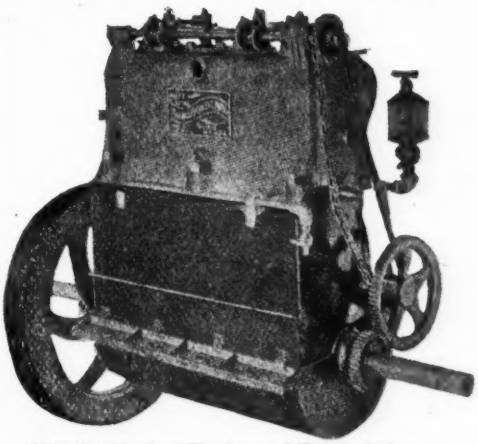

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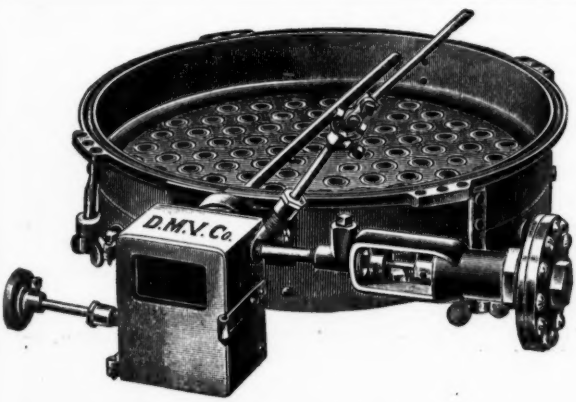

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Sept. 8 to 12, the Wabash will sell excursion tickets Chicago to Buffalo and return as follows: Good fifteen days, $11.10; 20 days, $12.55; until Oct. 8th, $14.50. Four daily trains with palace sleepers and free chair cars. Write for Pan-American folder. Send six cents in stamps and receive a copy of the latest song with music, "Wake me up at Buffalo."

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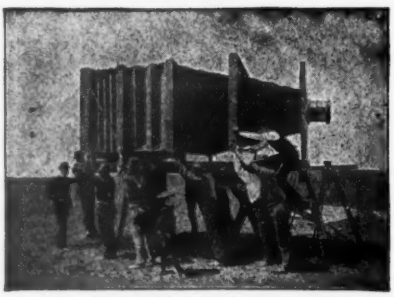

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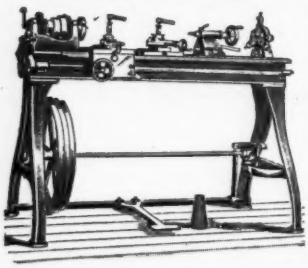

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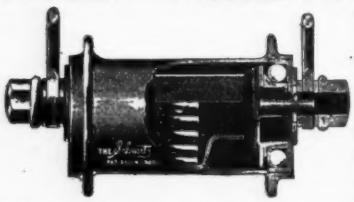

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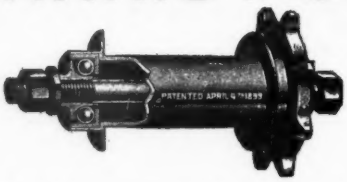

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Applicants for catalogues will please state specifically the names of the concerns whose catalogues they desire and enclose stamps to cover postage.

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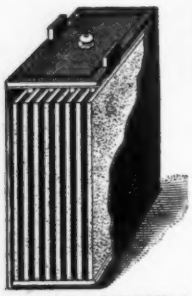

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